KALEIDOX

Kaleido-X User's Manual

Miranda KALEIDOX

Part Number: **M770-2800-111**

1 June 2011

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Table of Contents

1 New Features 1

Overview . . . 1
- New Feature in Kaleido-X Version 5.30 . . . 1
- Features Introduced in Kaleido-X Version 5.20 . . . 2
- Features Introduced in Kaleido-X Version 5.10 . . . 2

2 Getting Started 5

About this Document . . . 5
System Overview . . . 6
- Kaleido-Modular . . . 6
- Kaleido-X16 . . . 8
- Kaleido-X (4RU) . . . 10
- Kaleido-X (7RU) . . . 11
- Kaleido-X (7RU) x 2 Expansion . . . 12
- Kaleido-X Cluster . . . 13
- KMV-3901/3911 Cascade . . . 14

Detailed Directions . . . 14
- Verifying your System Configuration . . . 15
- Loading a Layout . . . 22

Cabling Diagrams . . . 24
RS-422 Connection Diagram . . . 28
XEdit Application Shortcuts . . . 29

3 Operation of the Monitor Wall 31

Key Concepts . . . 31
Detailed Directions . . . 35
- Logging on to the Monitor Wall Using the Kaleido-RCP2 . . . 35
- Displaying the Dashboard . . . 36
- Hiding the Dashboard . . . 37
- Loading Layouts . . . 38
- Displaying a Source in Full Screen Mode . . . 41

Changing a Source's Aspect Ratio 41
Video Cropping/Zooming 42
Toggling Safe Area Markers 43
Displaying Subtitles and Closed Caption Text 44
Editing UMD Text 47
Selecting an Input Method 47
Assigning Sources to Monitors 48
Changing Crosspoints 50
Using Timers 53
Triggering Actions 56
Triggering GPI Output Events 56
Acknowledging Alarms 57
Triggering Audio Monitoring 58
Setting a Display Monitor's Output Resolution 59
Changing the IP Address of a Multi-Viewer from the Monitor Wall 61

4 Managing Kaleido-X Systems 63

Key Concepts 63
Detailed Directions 66
Opening the XEdit Software 66
Using XEdit Online 69
Importing a Database 71
Exporting a Database 73
Creating a Backup 74
Retrieving a Backup 75
Creating a Single Multi-Viewer System 77
Creating a Cluster 79
Configuring the System Representation 85
Restoring Factory Defaults 87
Managing Multiple Databases Efficiently 90

5 Calibrating the Kaleido-X 93

Key Concepts 93
Detailed Directions 96
Multi-Viewer Output Calibrations 96
Multi-Viewer Input Calibrations 106
Router Output Calibrations 115
GPI/Genlock Calibrations 117

6 Configuring Alarms 119

Key Concepts 119
Alarm Debouncing 119

Alarm Status . . . 120
Alarm Suppression . . . 120
Global Alarms . . . 121
Virtual Alarm . . . 121
Sub-Alarm . . . 121
Alarm Monitor . . . 121
Teletext, Subtitles, and Closed Captions . . . 122
Dolby E/AC-3 Metadata . . . 123
Detailed Directions . . . 125
Configuring Video/Audio Alarm Threshold . . . 125
Configuring Alarm Debouncing . . . 128
Sharing Alarm Status Information Between Multi-Viewers and iControl . . . 128
Publishing Alarms to SNMP Devices . . . 131

7 Creating Logical Sources 135

Key Concepts . . . 135
Detailed Directions . . . 136
Creating and Configuring Logical Sources . . . 136
Configuring Alarm Levels . . . 141
Monitoring Internal-Router Outputs on the Monitor Wall (Sample Scenario) . . . 142

8 Setting Up Rooms 145

Key Concepts . . . 145
Detailed Directions . . . 146
Managing Rooms . . . 146
Configuring Displays . . . 152
Managing Display Libraries . . . 166

9 Creating Layouts 171

Key Concepts . . . 171
Detailed Directions . . . 173
Managing Layouts . . . 173
Configuring Video Monitors . . . 187
Configuring Audio Monitors . . . 199
Configuring Audio Scales . . . 201
Configuring Timers . . . 207
Configuring UMDs . . . 214
Configuring Alarm Monitors . . . 216
Configuring Metadata Monitors . . . 218
Configuring V-Chip Monitors . . . 219
Configuring Clocks . . . 220
Working with Composite Monitors . . . 225

Using the Region Editor . . . 231
Format Painting . . . 232
Managing Widget Libraries . . . 234

10 Creating Actions 237

Overview . . . 237
Key Concepts . . . 238
Detailed Directions . . . 239
Creating Monitor Wall Actions . . . 239
Creating Background Actions . . . 241

11 Managing Kaleido-RCP2 Users 249

Checklist . . . 249
XEdit Quick Start Task List . . . 249
Key Concepts . . . 250
RCP2 . . . 250
Detailed Directions . . . 250
Managing RCP Users . . . 250
Managing Room Access . . . 251
Setting Room Preferences . . . 252
Setting RCP User Preferences . . . 256

12 Routers & Kaleido-X 265

Overview . . . 265
Internal Router . . . 266
Kaleido-X as a Router . . . 266
Key Concepts . . . 267
Router Control Configurations . . . 268
Router Protocols . . . 272
Serial Connections . . . 275
Q & A . . . 277
Detailed Directions . . . 279
Configuring an External Router . . . 279
Configuring a Router Controller . . . 292
Configuring Internal Router Cards . . . 298
Router Connections . . . 303
Router Card Expansion . . . 306

13 Tally Interface Devices 311

Configuring Kalypso, Andromeda, Serial to TCP/IP Dispatcher and TSL Serial Devices . . . 311
Ross Video Production Switcher . . . 313

Sony Production Switcher 318
Kahuna Production Switcher 323
Kayak Production Switcher 330
Configuring the Kayak Switcher 331
Configuring the Multi-Viewer 332
Serial Port Test Agent 339

14 Using the Kaleido Remote Control Protocol 341
Overview 341

15 Using the Serial to TCP/IP Dispatcher 343
Overview 343

16 Administration and Servicing 345
Key Concepts 345
Default IP Settings 346
Hardware and Software Options 347
Dashboard Messages 349
Network Considerations & Port Usage 353
Detailed Directions 358
Assigning an IP Address to Each Device in Your System 358
Enabling Options 371
Configuring Power Supply Redundancy on a Kaleido-X16 373
Installing XEdit 375
Obtaining EDID Data From Display Screens When Using the DXF-100 Interface 382
Servicing 383
Upgrading your Multi-Viewer System 390

Index 391

Contact Us! 399

1 New Features

This chapter describes new features in Kaleido-X version 5.30.

Overview

Kaleido-X version 5.30 is a major release adding support for the new Kaleido-Modular KMV-3911 multi-viewer model. Version 5.30 also introduces a few enhancements.

New Feature in Kaleido-X Version 5.30

- **Support for the new Kaleido-Modular KMV-3911 multi-viewer:** The KMV-3911 multi-viewer replaces the KMV-3901. In addition to the earlier model's existing features, the KMV-3911 supports up to two HD-SDI monitoring outputs (with embedded audio): one associated with Head 1, and one with Head 2. See "KMV-3901/3911" on page 348 for the list of optional features, and "Configuring the HD-SDI Monitoring Output Format" on page 161 for more information.

Enhancements in Kaleido-X Version 5.30

- **Teletext/subtitling color:** Text color attributes are now supported for teletext (WST, OP-47). See "Setting a Video Monitor's Text Mode" on page 198.

> **Note:** Other text formatting attributes specified in the OP-42 (WST) and OP-47 (HD teletext) standards (e.g. background colors, italic and bold type, font case) are not supported. On the monitor wall, closed captions (CC, DTVCC) appear in white against a black background.

- **Support for embedded audio at the HD-SDI monitoring output:** All multi-viewer models now support monitoring of one audio pair, embedded on Group 1, at the HD-SDI output.

  Note: In the case of the Kaleido-X16, support for audio monitoring at the HD-SDI output requires version 5.30 (or later) of the Kaleido-X Software, and recent hardware. In the XAdmin Status and Options page, under SYSTEM, the value indicated for the **Card revision** attribute must be 0x4 or more.

- **KMV-3901/3911:** Support for dynamic range calibration. See "Calibrating Detail Enhancement and Dynamic Range" on page 111.
- **Custom images:** The maximum size for a custom safe area image, clock logo, or layout background image has increased to 256 KB. See "Selecting a Background Image for a Layout" on page 182, "Inserting a Clock Logo" on page 223, and "Adding a Custom Safe Area Image" on page 189.

Features Introduced in Kaleido-X Version 5.20

- **Support for 3D-stereoscopic sources**: Kaleido-X, Kaleido-X16, and KMV-3901-8×2 now support merging two distinct signals (a *left eye* signal and a *right eye* signal) and interleaving them into a composite video. The interleaved composite, displayed on a 3D-capable display, viewed with polarized 3D glasses, is seen as a stereoscopic, 3D image. In addition, combining 2D images and 3D images (interleaved) on one display is supported.

  Note: To be able to monitor a 3D stereoscopic signal, you must first add a second video level to your logical sources (so you have a level for each eye), and then for each video monitor or composite you wish to use for 3D monitoring, you must assign the left-eye and right-eye levels.

- **Support for audio monitoring output through HDMI**: The Kaleido-X16 and KMV-3901-8x2 now support audio monitoring output over HDMI, for PCM audio pairs from SDI sources.
- **Support for Cascade solution**: To address solutions with more inputs per head using smaller cost-effective multi-viewers, KMV-3901-8x2 multi-viewers can now be configured in cascade. This allows the support of the following configurations:
  - KMV-3901-8x2 cascade with 16 inputs × 2 outputs
  - KMV-3901-8x2 cascade with 16 inputs × 1 output
  - KMV-3901-8x2 cascade with 24 inputs × 2 outputs
  - KMV-3901-8x2 cascade with 24 inputs × 1 output

Features Introduced in Kaleido-X Version 5.10

Kaleido-X version 5.10 was a major release containing several new features, enhancements and bug fixes.

- **Support for 3Gbps input signals:** The new KXI-16HSV3 is a universal input card that accepts 3Gbps (1080p 60 Hz, 1080p 59.94 Hz, and 1080p 50 Hz), HD-SDI, SD-SDI, and composite inputs; the KXI-16HS3 supports 3Gbps, HD-SDI, and SD-SDI inputs.
- **Support for version 5.0 of the TSL UMD protocol:** Version 5.0 of the protocol allows TCP/IP or UDP/IP communication between the TSL UMD controller and a multi-viewer, over a network. Since the protocol and connection mode are totally different, devices using version 5.0 of the TSL UMD protocol and those using version 3.1 of the protocol are considered different devices in XEdit. To use the latest protocol (v. 5.0), select the **TSL (network)** device from XEdit's Equipment library. As of XEdit version 5.10, the earlier version-3.1 TSL device is called **TSL (serial)**.

> **Note:** The current implementation of the TSL UMD v. 5.0 protocol in the Kaleido-X Software does not support multicast mode.

Enhancements in Kaleido-X Version 5.10

- [Ref. #25844] **Router Control:** Support for the HCO-1821 HD/SD/ASI Change Over with Clean Switch.
- [Ref. #25706] **Viewing assignment information for a video source on the monitor wall:** Right-click a video monitor, and then point to **Info** on the shortcut menu, to view the monitor-wall destination label, current logical source, physical source ID.
- [Ref. #25780/26851] **Viewing assignment information between router sources and multi-viewer inputs:** The *Signal Path Viewer* application can be launched from the Kaleido-X home page. It opens as a standalone panel, updated in real time as multi-viewer inputs are assigned different router sources, and crosspoints are changed on the upstream router. For each multi-viewer input, the panel displays the current router source assignment, the corresponding router destination, as well as router status information. In the case of a Kaleido-X multi-viewer model, it also indicates if an input card has been removed.

> **Note:** In the case of a Kaleido-X multi-viewer model, if you remove or reseat output cards, Signal Path Viewer may stop displaying real-time updates, in which case close the application and then open it again.

- **Kaleido-X (7RU), Kaleido-X (7RU) × 2, and Kaleido-X16:** With earlier versions of the Kaleido-X Software, it was possible to send sources to a multi-viewer's internal router outputs, as long as these sources were associated with multi-viewer inputs. As of Kaleido-X version 5.10, sending sources from an upstream router to the multi-viewer's router outputs is also supported.

> **Note:** This feature is based on the *KX Router* logical router, instead of using the internal router. This means that you must add the multi-viewer's router outputs to the KX Router configuration, otherwise the **Send to [router] output** menu will not be enabled. Once this is done, do not use the Internal Router logical router. In addition, KX Router must have only one level.

- **HD-SDI monitoring output:** Information about the optional SDI outputs is available in XAdmin's Status and Options; SDI output calibrations and other settings can be configured in XEdit. In the case of the Kaleido-X multi-viewer models, the presence and status (normal mode, safe mode) of the KXO-HDM mezzanine are available via SNMP. Traps are also available for both alarms.

  Note: Like other card presence alarms, the KXO-HDM traps are not configurable, and are always sent.

2 Getting Started

Welcome to the Kaleido-X! This chapter provides an overview of the different multi-viewer models and their initial configuration process.

Summary

System Overview 6
Detailed Directions 14
Cabling Diagrams 24
RS-422 Connection Diagram 28
XEdit Application Shortcuts 29

About this Document

The *Kaleido-X User's Manual* is intended to help you leverage the full working potential of the Kaleido-X Software and XEdit application for controlling and monitoring audio, and video broadcast signal paths for interfacing, routing distribution and other peripheral devices.

The Kaleido-X series hardware—including the Kaleido-Modular, Kaleido-X16, and Kaleido-X multi-viewer models—and the associated software products are designed and produced by Miranda Technologies Inc.

For installation instructions, refer to the *Quick Start Guide* that shipped with your multi-viewer. Once you have completed your multi-viewer's initial installation perform a system verification (see "Verifying your

System Configuration" on page 15), load a layout on the monitor wall if you haven't done so already (see "Loading a Layout" on page 22), and then review the more advanced topics in "Administration and Servicing" on page 345, to fine-tune your initial system configuration.

After you have established that your basic configuration works as expected, move on to the other chapters in this manual, to complete your system configuration until it meets your actual monitoring requirements.

Note: In line with our commitment to environmental preservation, only the Release Notes, the Quick Start Guide for your multi-viewer model, and some ancillary documents (e.g. welcome letters, warranty cards) are distributed in printed form. All manuals are available on the Kaleido-X DVD. You can also obtain them from the *Software Downloads* section of Miranda's Technical Support portal.

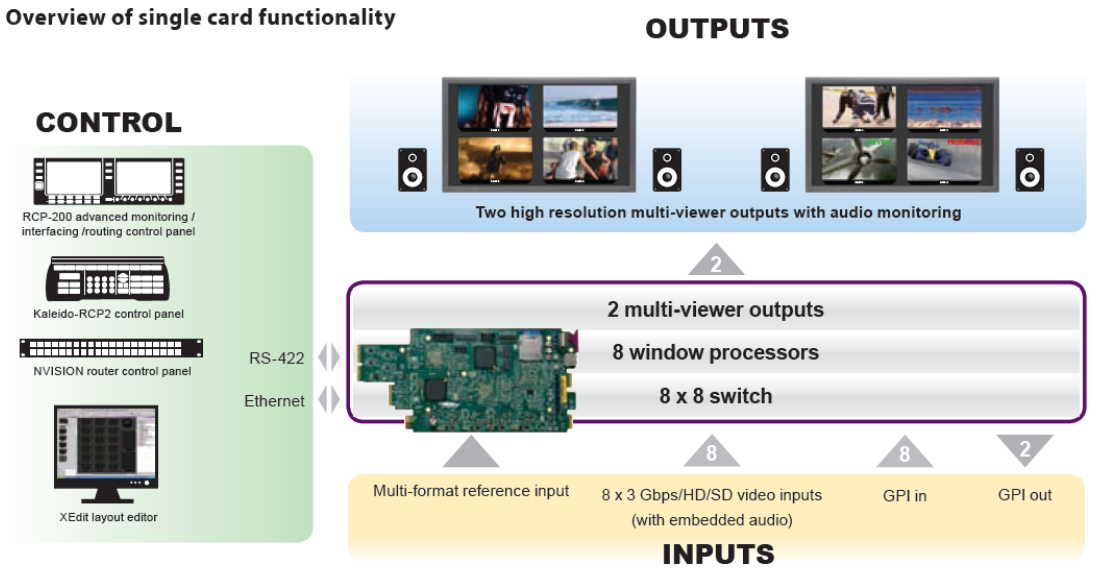
System Overview

This section reviews the different multi-viewer models that support the Kaleido-X Software:

Kaleido-Modular 6
Kaleido-X16 8
Kaleido-X (4RU) 10
Kaleido-X (7RU) 11
Kaleido-X (7RU) x 2 Expansion 12
Kaleido-X Cluster 13
KMV-3901/3911 Cascade 14

Kaleido-Modular

The Kaleido-Modular KMV-3911, which has replaced the earlier KMV-3901 model, is an expandable, 8-input, dual-output multi-viewer (3Gbps/HD/SD) on one Densité Series card. Hosted in a Densité 3 frame, the KMV-3911 is the most space- and energy-efficient multi-viewer system, with up to 20 multi-viewer outputs per 3 RU frame, or up to 288 multi-viewer outputs when connected to an upstream router.



Kaleido-Modular KMV-3901/3911 Features

With its unmatched space and energy efficiency, Kaleido-Modular is ideal for production monitoring in trucks. The multi-viewer system integrates tightly with the highly space-efficient NVISION 8288 Truck router (288 × 576 in 10 RU), as well as Densité signal processing cards, and third-party production switchers. Control of a highly integrated system is simplified with the RCP-200 panel, which can operate the router and multi-viewer, as well as signal processing and distribution cards.

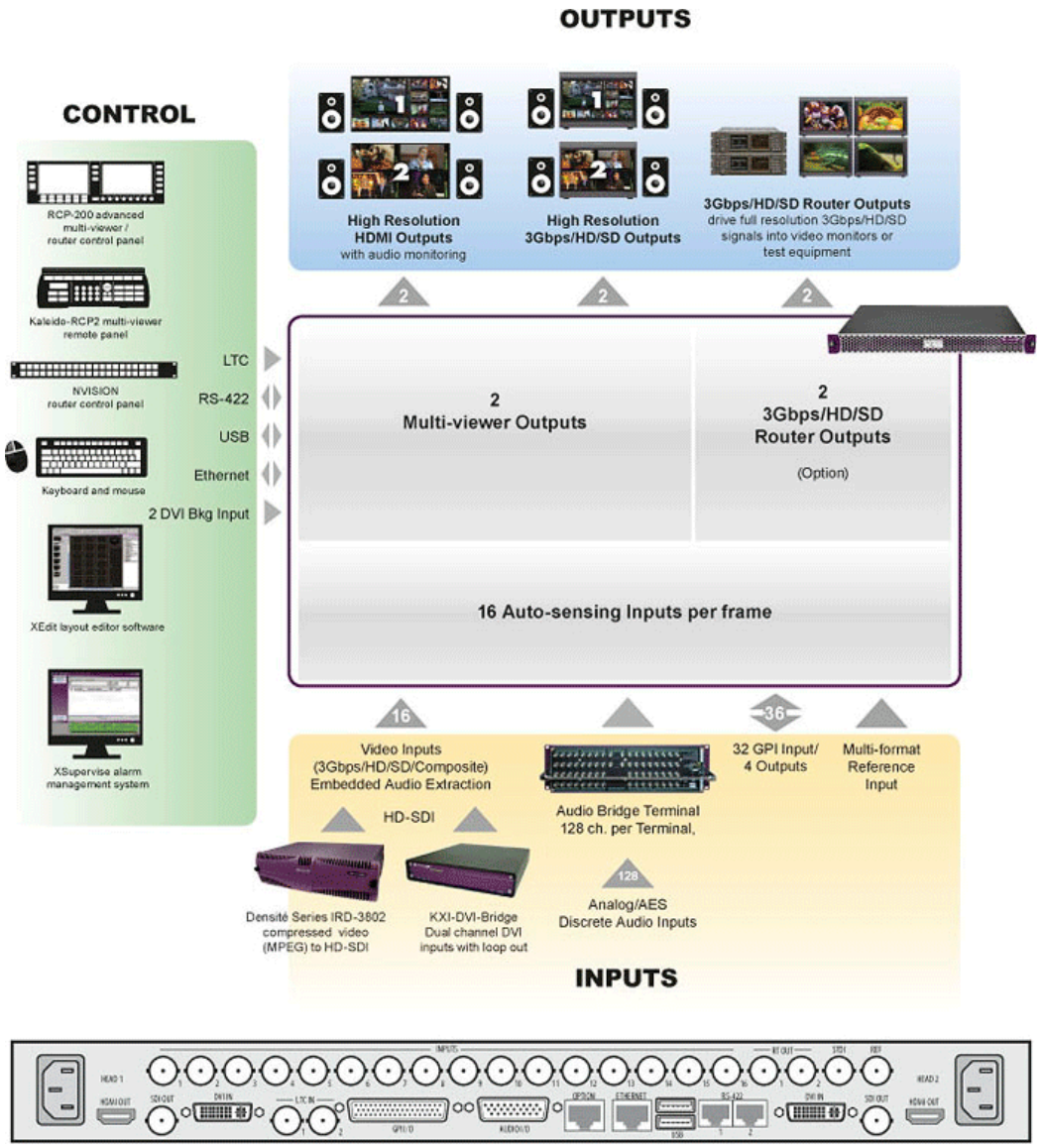
The KMV-3901/3911 provides a subset of the features of the Kaleido-X (4RU) and (7RU) models:

- Eight auto-sensing 3Gbps/HD/SD video inputs, two independent HDMI outputs
- Video signals can be repeated in up to eight windows, and scaled up to 1920 × 1200 pixels
- Audio signal, video time code and AFD/WSS data can be extracted for on-screen display
- A reference signal from a REF-1801 Densité card can be used to minimize processing delay, and reference clocks on the monitor wall
- Expansion through combination with upstream router
- DXF-200 extension module simplifies long runs to monitors from Densité frame, and is a single fiber solution for supporting high-resolution (1920 × 1200) displays over distances of up to 1000 m (3300 ft)
- Choice of multi-viewer remote control panels: simple Kaleido-RCP2 and advanced RCP-200 with router control
- Control by NVISION control panel and NV9000 controller
- Super silent for installation within studios and control rooms

Kaleido-X16

The Kaleido-X16 is a compact, ultra-quiet multi-viewer with 16 inputs and two multi-viewer outputs. It offers the highest level of image quality, and can be used with 3Gbps/HD/SD and Analog video. It is ideal for small control rooms, although it can also be paired with routers to create the very largest combined multi-viewer and routing systems.

There are two types of Kaleido-X16: Kaleido-X16-S (single head) and Kaleido-X16-D (dual head).



Kaleido-X16 system overview

The 1RU Kaleido-X16 is ideal for smaller monitoring facilities, such as call letter television station master control rooms, mobile trucks and production fly cases, as well as community television. The Kaleido-X16's super silent design is highly appreciated for use within studios and control rooms.

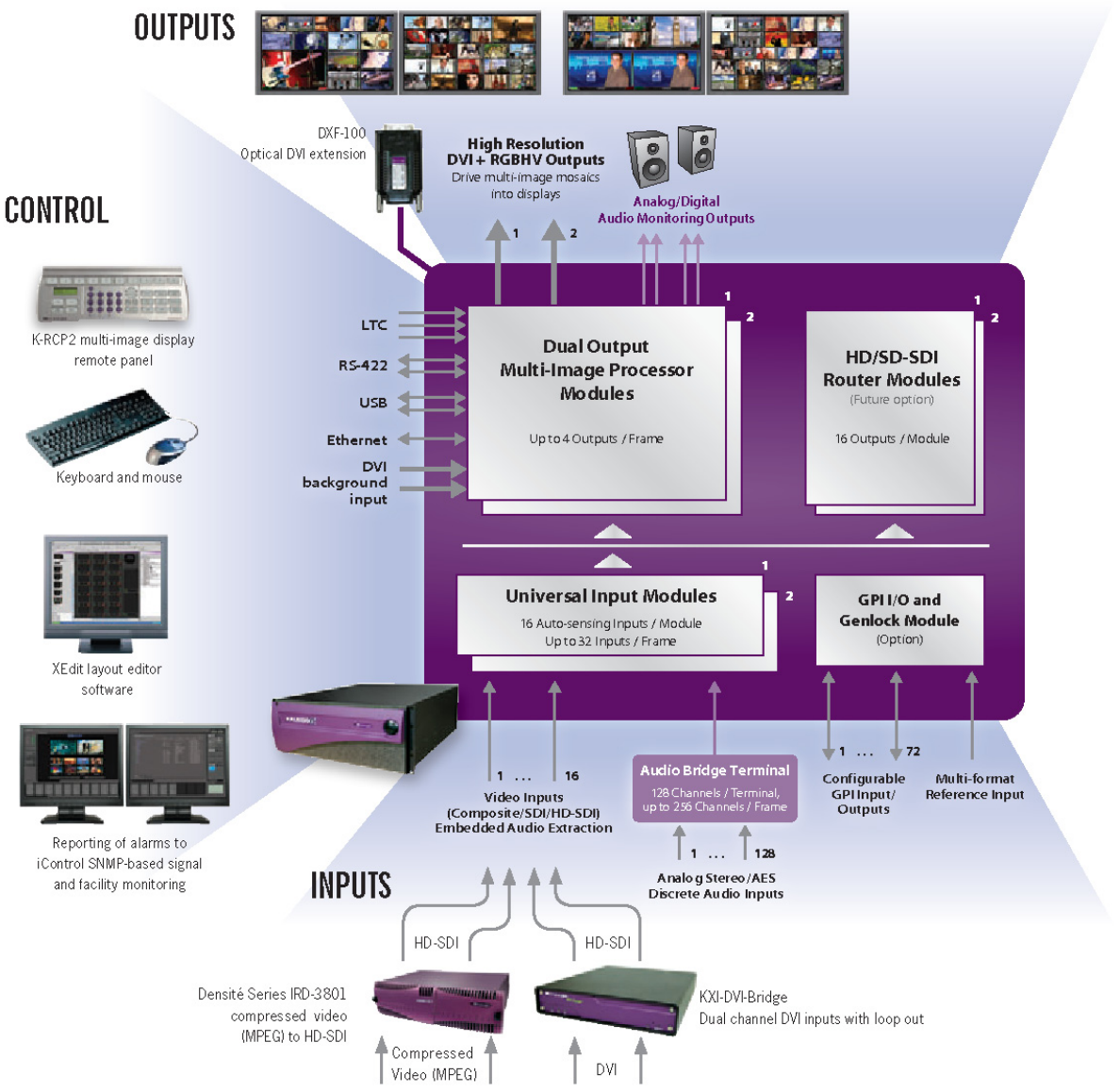
Kaleido-X16 provides a subset of the features of the Kaleido-X (4RU) and (7RU) models:

- 1RU non-modular frame
- 16 auto-sensing 3Gbps/HD/SD/Analog video inputs, two independent HDMI outputs
- Two 3Gbps/HD/SD router outputs
- 3Gbps with 3D support (SMPTE-425M Level A & B)

- Expansion through combination with upstream router
- 4 analog channel, 2 digital channel audio monitoring
- 2 HD-SDI monitoring outputs
- DXF-100 optical DVI extension module simplifies long runs to monitors from frame, and is a single fiber solution for supporting high-resolution (1920 × 1200) displays over distances of up to 1000 m (3300 ft)
- Choice of multi-viewer remote control panels: simple Kaleido-RCP2 and advanced RCP-200 with router control
- Internal router control by NVISION control panel and NV9000 Controller
- Super silent for installation within studios and control rooms

Kaleido-X (4RU)

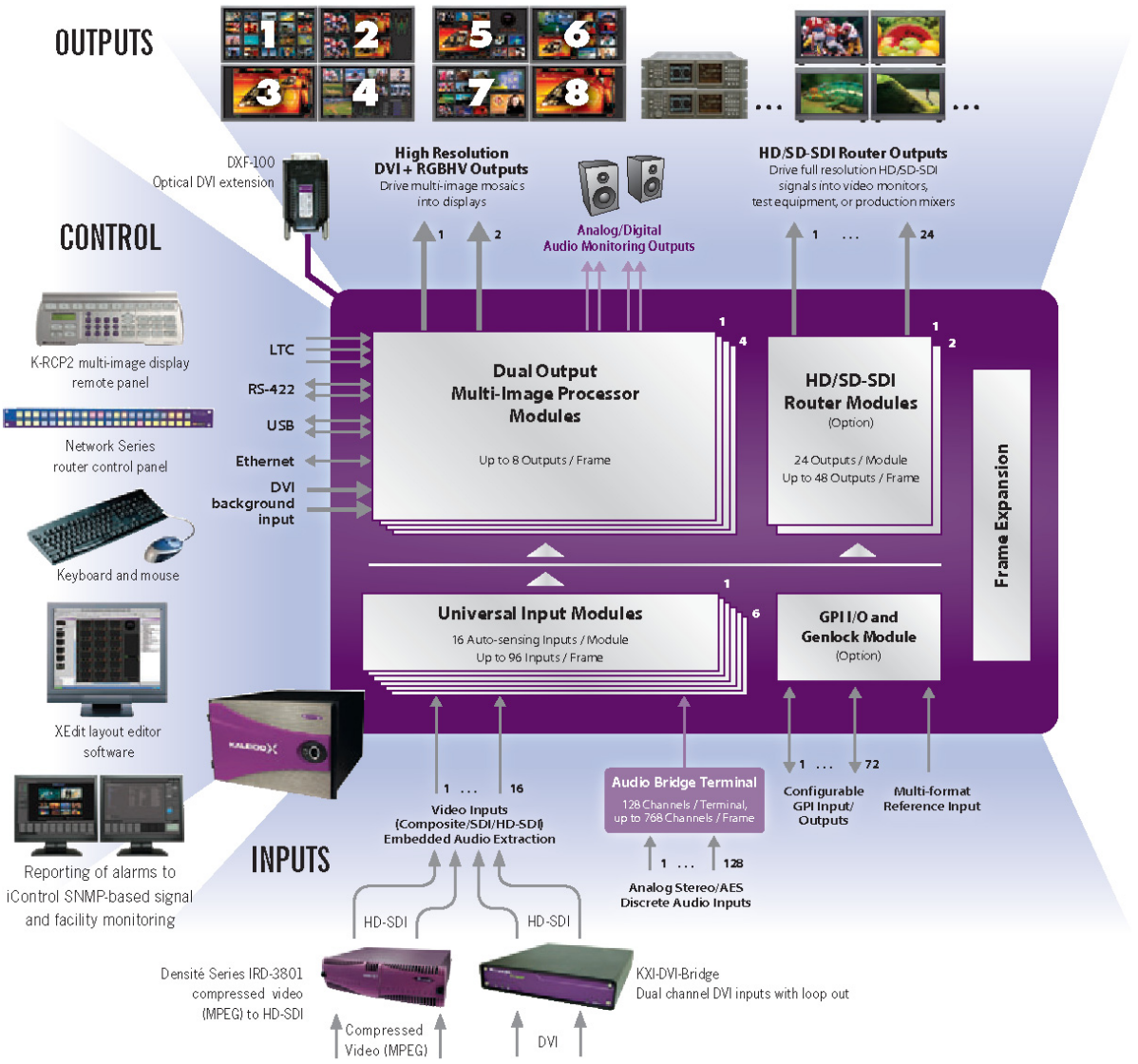
The Kaleido-X (4RU) is a multi-room, multi-image display processor and router in a single, expandable chassis. Its unique mix of capabilities represents the most integrated monitoring and routing solution. As a multi-image processor, it offers the highest level of signal flexibility. Each chassis can display 32 HD, SD or Analog inputs any number of times, in any size, across 4 displays of any resolution and orientation.



Kaleido-X (4RU) system overview

Kaleido-X (7RU)

The Kaleido-X (7RU) is a multi-room, multi-image display processor and router in a single, expandable chassis. Its unique mix of capabilities represents the most integrated monitoring and routing solution. As a multi-image processor, it offers the highest level of signal flexibility. Each chassis can display 96 HD, SD or Analog inputs any number of times, in any size, across 8 displays of any resolution and orientation. As a router, it offers switching of 96 unprocessed inputs to 48 HD/SD outputs for feeding monitors, test equipment and master control or production switchers.



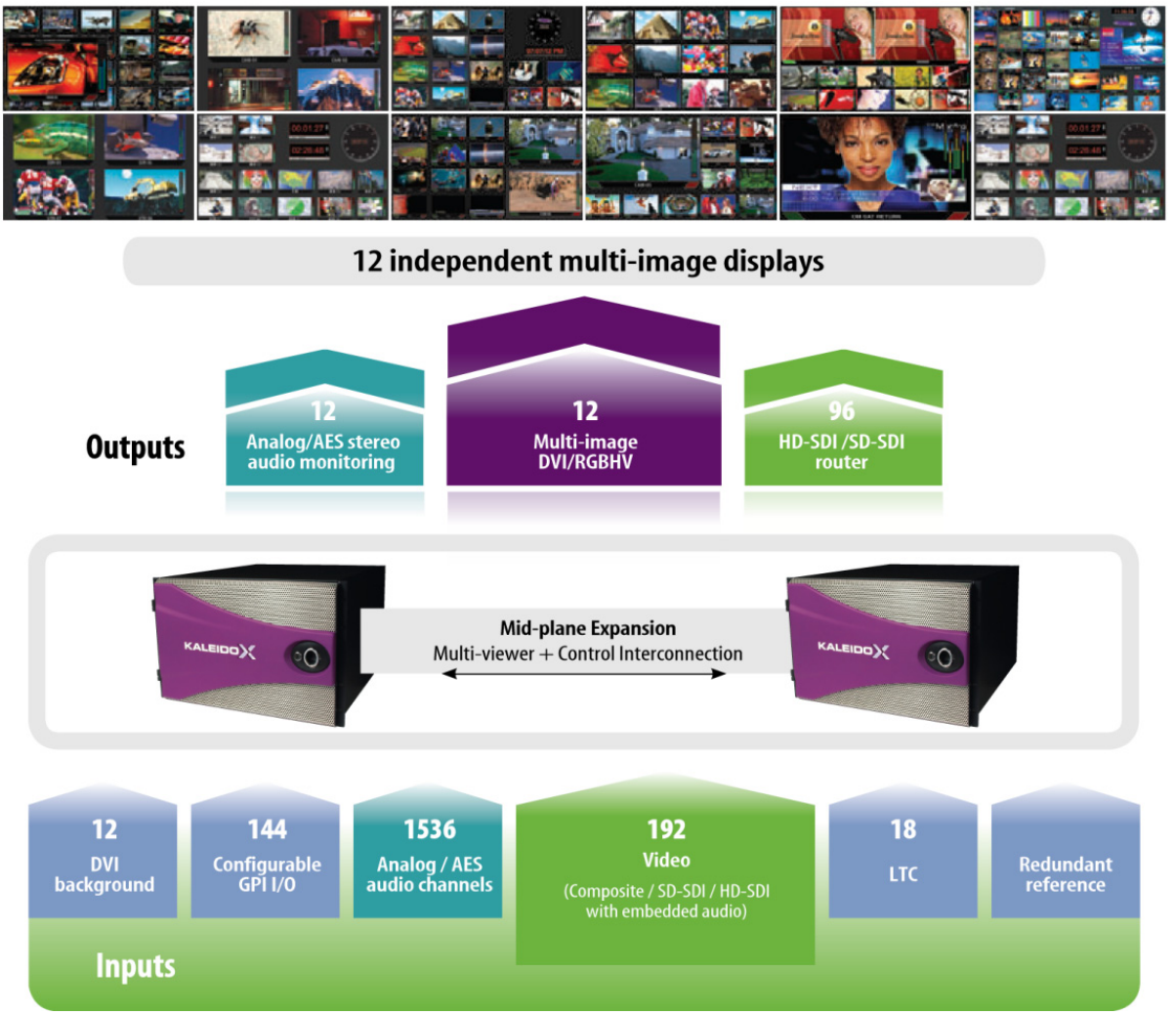
Kaleido-X (7RU) system overview

Kaleido-X (7RU) x 2 Expansion

Since version 3.00 of Miranda's Kaleido-X Software, it is possible to expand the input connectivity of one Kaleido-X (7RU) frame to include that of a second. The two frames, each with its own expansion (KXO-EXP) card, are connected by a high bandwidth cable, such that all the output (KXO) modules on each frame (up to 6 in total) have access to all inputs (KXI) on each frame (up to 192 in total) without any blocking or bandwidth limitations.

Using XEdit, the two frames can be configured as a single system, allowing *rooms* to share input modules from either frame. The expansion card allows seamless sharing of video, audio monitoring output, time

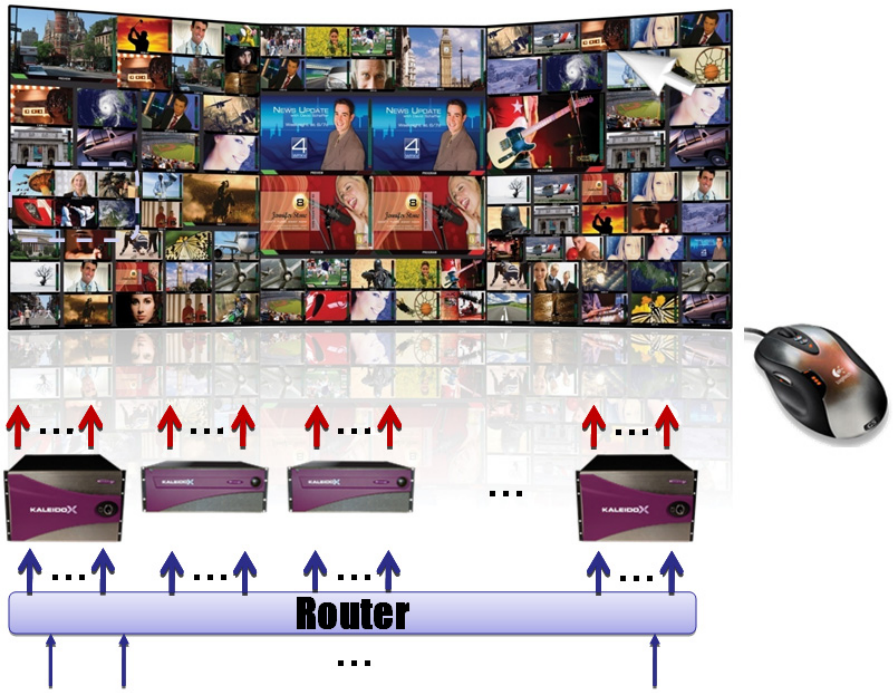
code inputs, reference input, metadata information (CC, XDS, alarms, etc.), and audio level meter data. Refer to the "Kaleido-X (7RU) Expansion" chapter in the *Kaleido-X (7RU) Hardware Description & Installation Manual* for more information.



Kaleido-X (7RU)×2 expansion system overview

Kaleido-X Cluster

As of version 4.00 of the Kaleido-X Software, it is possible to configure a *cluster system*, allowing operation of layouts sharing output signals from multiple Kaleido-X multi-viewers fed by a router, while using only one mouse, and one Kaleido-RCP2. Refer to "Creating a Cluster" on page 79, for more information.



Kaleido-X cluster system overview

KMV-3901/3911 Cascade

As of version 5.20 of the Kaleido-X Software, it is possible to configure up to three KMV-3901/3911 multi-viewers as a cascade system. Unlike the cluster, whose purpose is to increase the number of output heads in a room, the cascade increases the maximum number of inputs that can be displayed to a single head. For more information, refer to the *KMV-3901/3911 Cascade Step-by-Step Configuration* guide, available on the Kaleido-X DVD.

Detailed Directions

Verifying your System Configuration 15
Loading a Layout 22

Verifying your System Configuration

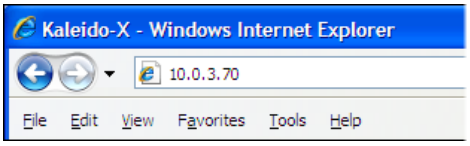
Verifying a Multi-Viewer's Internal Statuses and Options

To perform a system verification:

1. You can check internal system statuses via the Web-based XAdmin application. There are two ways to access XAdmin:

   Method 1: Use XEdit on a client PC to start the XAdmin application (see "Installing XEdit" on page 375). On the **Configure** menu, click **Use XAdmin**. This will open your default Web browser.

   Method 2: From a workstation on the same subnet, open a Web browser window and type the multi-viewer's IP address in the address bar.[1]

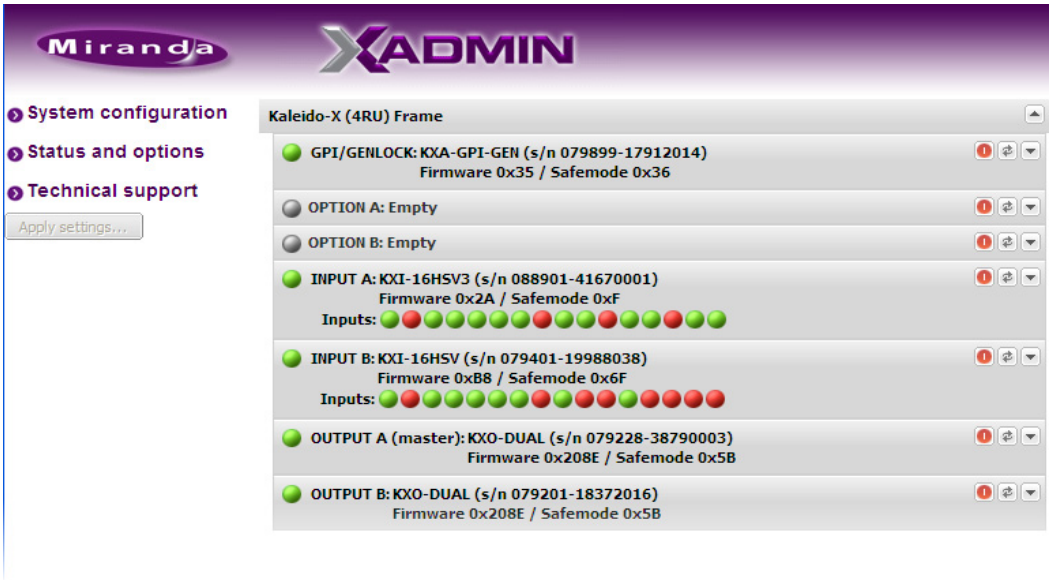
   

   The Kaleido-X home page appears:

2. Click the **XAdmin** button.

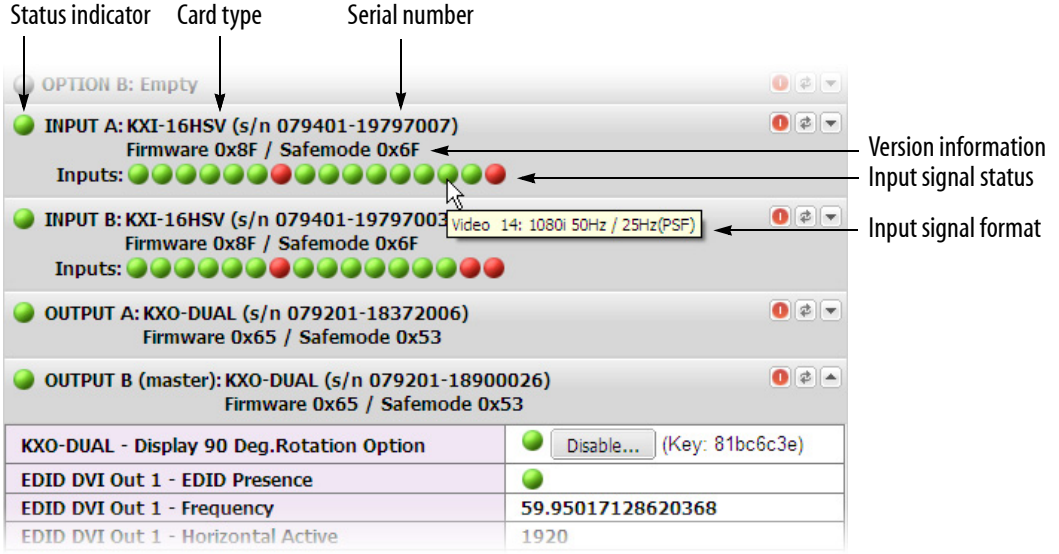
   The XAdmin **Status and Options** page appears, displaying a list of all modules and their statuses.

1. The multi-viewer must have Kaleido-X software version 2.10 or later.

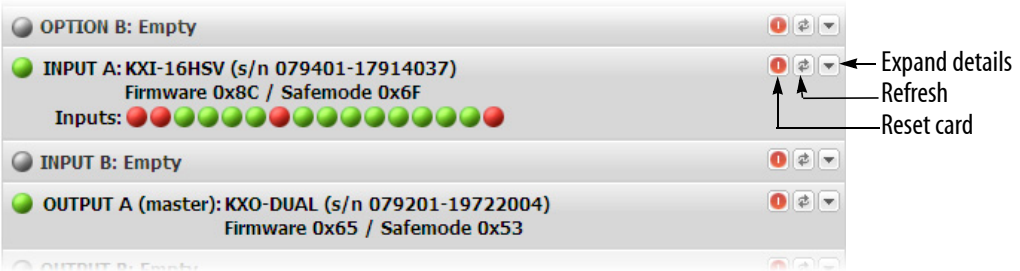


For example, in the case of a Kaleido-X multi-viewer, the heading rows show the card type, serial number, firmware and safemode versions, a card status indicator, and input signal status indicators. The card status indicator shows whether the card is running normally (green) or in safe mode (red). The signal status indicators reveals the presence of a valid input signal at the corresponding connector.

3. Move the pointer to an input signal status indicator to view the associated signal format.

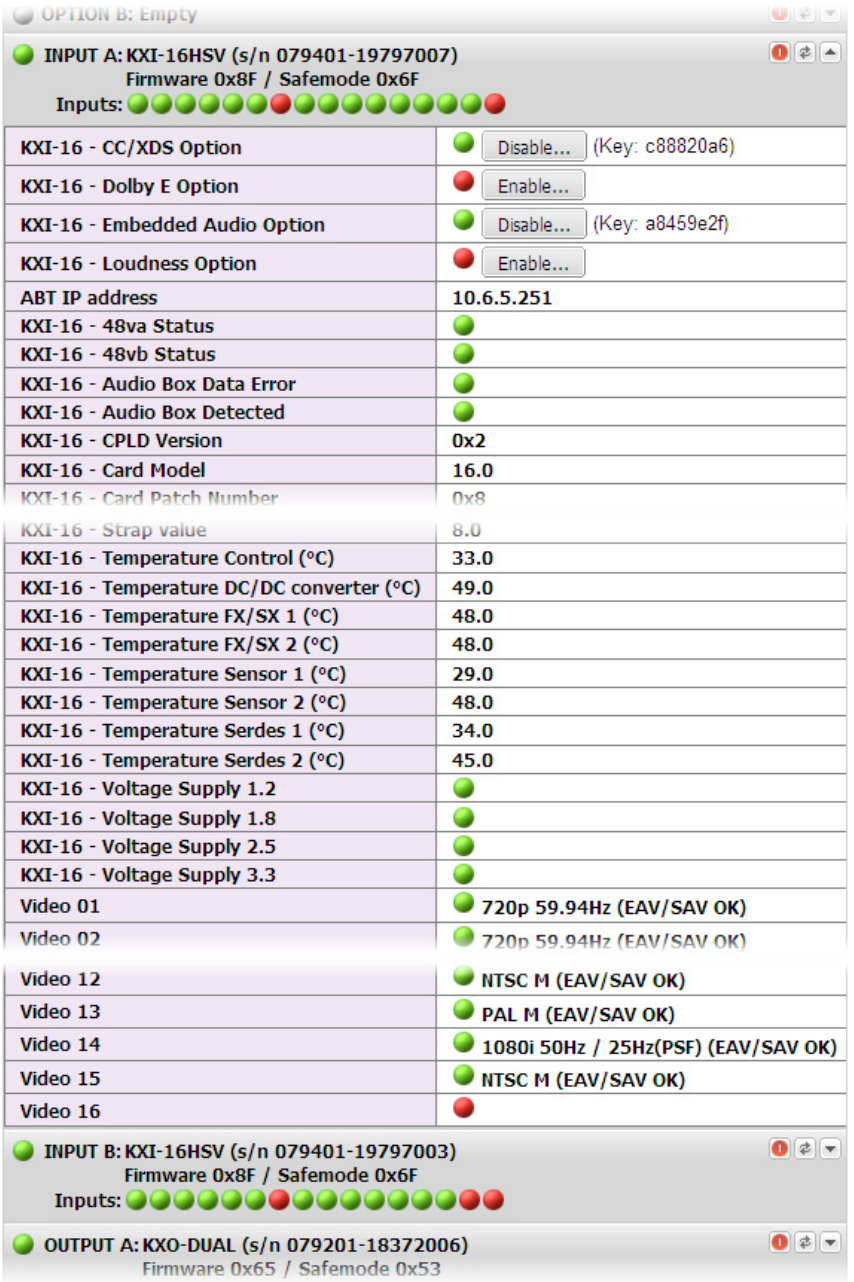


4. Click the arrow button at the end of a module's heading row to view more detailed information about this module.



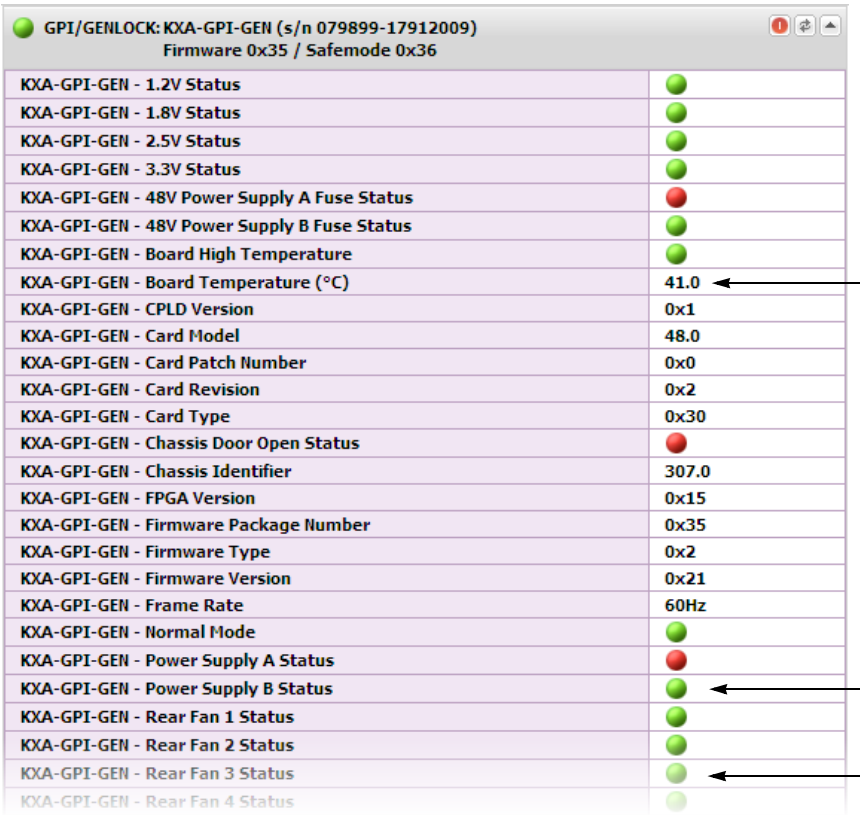
- At any time you can click the **Refresh** button to make sure the data displayed for the selected module is up to date.
- In the case of a Kaleido-X multi-viewer, click the **Reset card** button at the end of a card's header row to reset the card remotely, directly from your Web browser.
- In the case of a Kaleido-X16 or Kaleido-Modular multi-viewer model, click the **Reset multi-viewer** button at the end of the multi-viewer's header row to reset the multi-viewer remotely, directly from your Web browser.

5. Review the enabled options for each module, and make sure that no error is reported.



Note: See "Hardware and Software Options" on page 347 for more information on the options available for the different multi-viewer models.

6. If your system supports a GPI interface[1], you can check the main system statuses of the Kaleido-X multi-viewer, to make sure that there are no errors or alerts related to:
   - system temperature
   - power supply status
   - fan operation
   - card fault conditions



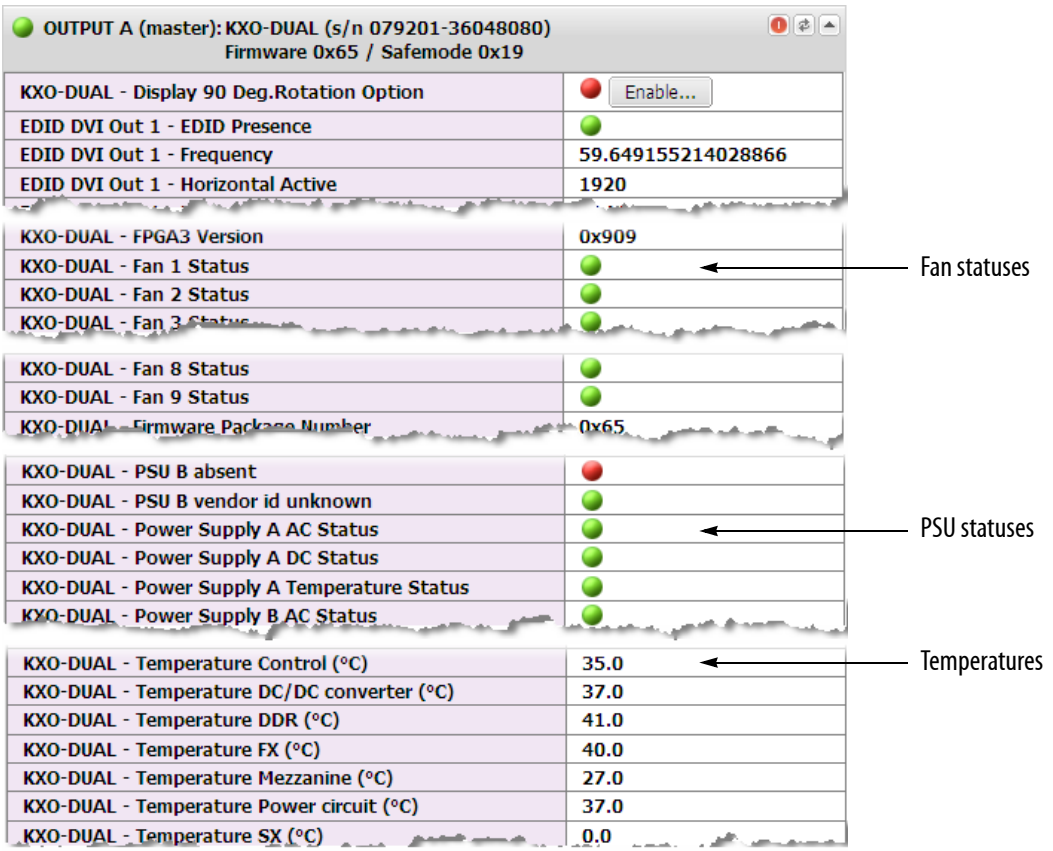
The other statuses—especially the ones listed in the table below—should all be normal, although if you left the door open when checking a GPI/Genlock card's LEDs, you may see a warning under **Chassis Door Open Status**.

KXA-GPI-GEN - 1.2V Status
KXA-GPI-GEN - 1.8V Status
KXA-GPI-GEN - 2.5V Status

1. The KXA-GPI-GEN card, with support for GPI, is standard on the Kaleido-X (7RU), and optional for the Kaleido-X (4RU). GPI support is built-in on the Kaleido-X16, and Kaleido-Modular multi-viewers.

KXA-GPI-GEN - 3.3V Status
KXA-GPI-GEN - 48V Power Supply A Fuse Status
KXA-GPI-GEN - 48V Power Supply B Fuse Status
KXA-GPI-GEN - Board High Temperature
KXA-GPI-GEN - Chassis Door Open Status
KXA-GPI-GEN - Power Supply A Status
KXA-GPI-GEN - Power Supply B Status
KXA-GPI-GEN - Rear Fan 1 Status
KXA-GPI-GEN - Rear Fan 2 Status
KXA-GPI-GEN - Rear Fan 3 Status
KXA-GPI-GEN - Rear Fan 4 Status
KXA-GPI-GEN - Rear Fan 5 Status
KXA-GPI-GEN - Rear Fan 6 Status

If you have a Kaleido-X (4RU) without a KXA-GPI-GEN card, then you will find the fan and power supply statuses listed with the master output card's information:


OUTPUT A (master): KXO-DUAL (s/n 079201-36048080)
Firmware 0x65 / Safemode 0x19
KXO-DUAL - Display 90 Deg.Rotation Option
Enable...
EDID DVI Out 1 - EDID Presence
EDID DVI Out 1 - Frequency
59.649155214028866
EDID DVI Out 1 - Horizontal Active
1920
KXO-DUAL - FPGA3 Version
0x909
KXO-DUAL - Fan 1 Status
KXO-DUAL - Fan 2 Status
KXO-DUAL - Fan 3 Status
KXO-DUAL - Fan 8 Status
KXO-DUAL - Fan 9 Status
KXO-DUAL - Firmware Package Number
0x65
KXO-DUAL - PSU B absent
KXO-DUAL - PSU B vendor id unknown
KXO-DUAL - Power Supply A AC Status
KXO-DUAL - Power Supply A DC Status
KXO-DUAL - Power Supply A Temperature Status
KXO-DUAL - Power Supply B AC Status
KXO-DUAL - Temperature Control (°C)
35.0
KXO-DUAL - Temperature DC/DC converter (°C)
37.0
KXO-DUAL - Temperature DDR (°C)
41.0
KXO-DUAL - Temperature FX (°C)
40.0
KXO-DUAL - Temperature Mezzanine (°C)
27.0
KXO-DUAL - Temperature Power circuit (°C)
37.0
KXO-DUAL - Temperature SX (°C)
0.0
Fan statuses
PSU statuses
Temperatures

Verifying a Kaleido-RCP2

To verify that the RCP2 is functioning normally:

1. Log on to the RCP2 (see "Logging on to the Kaleido-RCP2" on page 368).
2. Test various operations using the RCP2 keyboard and the mouse (e.g. load layout presets).

Verifying an Audio Bridge Terminal

To verify that the ABT is functioning normally:

- Inspect the ACTIVITY and front panel LEDs on the unit to make sure there are no error conditions.

  The ACTIVITY indicator is located on the right-hand side of the rear panel. This LED reports the status of the Ethernet connection as follows:

Color	Board Status
Off	No link detected
Green	Normal (good link)

Orange	Activity
Red	Hardware fault
Flashing red	Upgrading firmware

Two LEDs are visible on the front panel, one for each power supply. When lit, they both indicate the same status:

Color	**Board Status**
Green	Normal
Flashing green	Normal, rebooting
Orange	Warning
Flashing Orange	Warning, rebooting
Red	Hardware fault
Flashing red	Upgrading firmware

When the ABT is powered up, all three LEDs will be orange until the boot sequence is terminated. This is a visual indicator that the LEDs are functioning properly.

Loading a Layout

If your system was configured prior to shipment, then the designated layout will show up on all displays. Otherwise, a gray screen will appear with the following message in the middle:

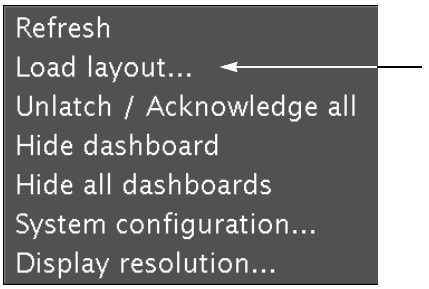
"No layout has been assigned to this room. Please load a layout."

To load a layout on the monitor wall:

1. Connect a mouse to the Kaleido-RCP2 (if available) and log on to the multi-viewer from the RCP2, if you have not already done so (see "Logging on to the Kaleido-RCP2" on page 368).

   Alternatively, connect the mouse directly to one of the USB ports on the multi-viewer.

2. Right-click anywhere on the monitor wall, point to **Monitor Wall** (if you clicked a layout element), and then click **Load layout** on the shortcut menu.



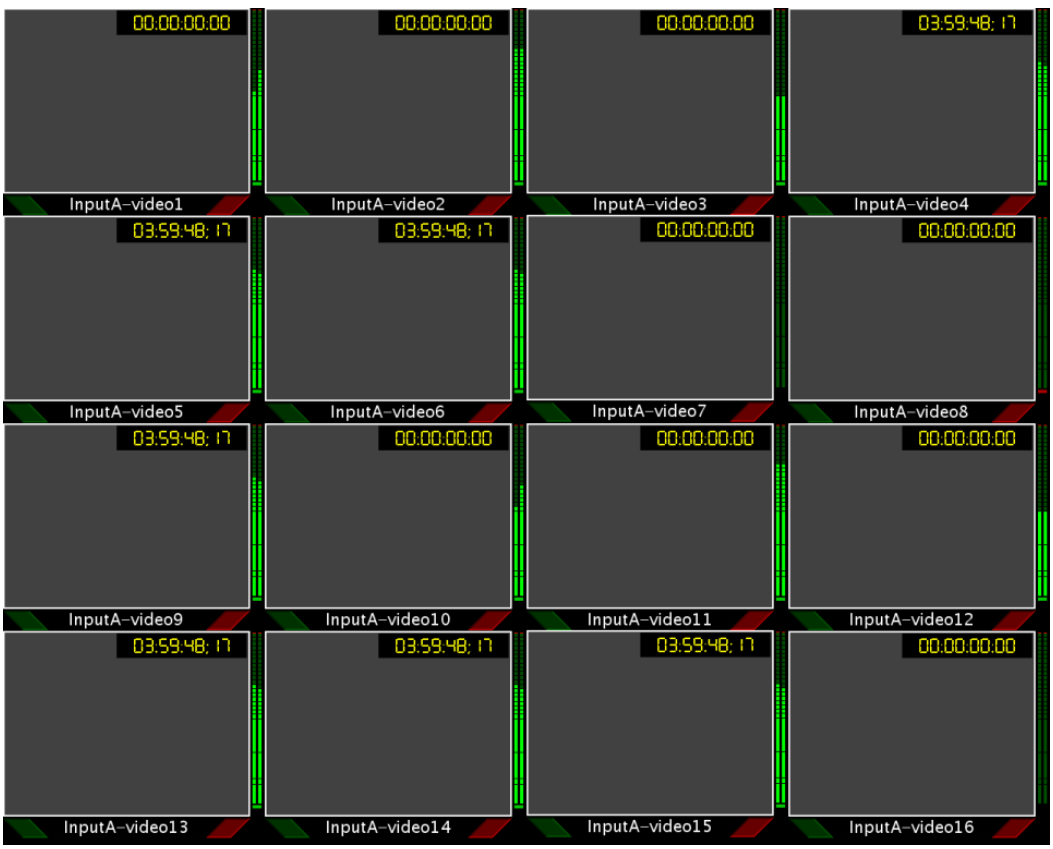
Monitor wall shortcut menu

A layout browser appears on the displays associated with the current room.

> **Note:** By default, each room is associated with one multi-viewer output or output card. Most predefined layouts are configured to show all video streams for a given input card (in the case of the Kaleido-X multi-viewer models) or all video streams connected to the multi-viewer's inputs (in the case of a Kaleido-X16 or Kaleido-Modular multi-viewer model).

3. Choose a default layout from the layout browser.

   The video sources should appear on the room displays.

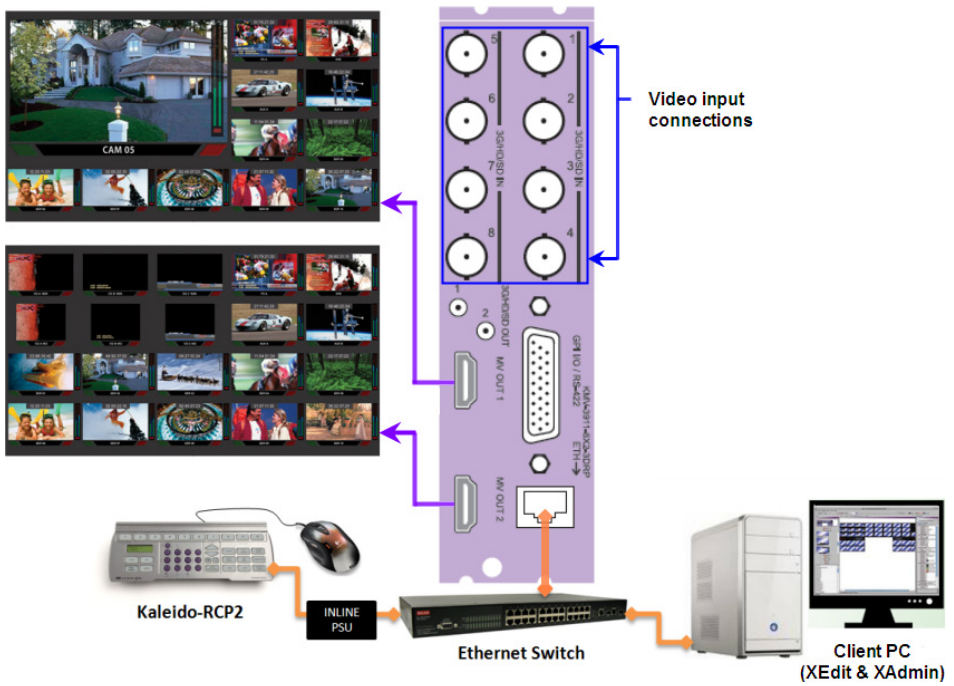


Example of a default layout showing 16 video streams

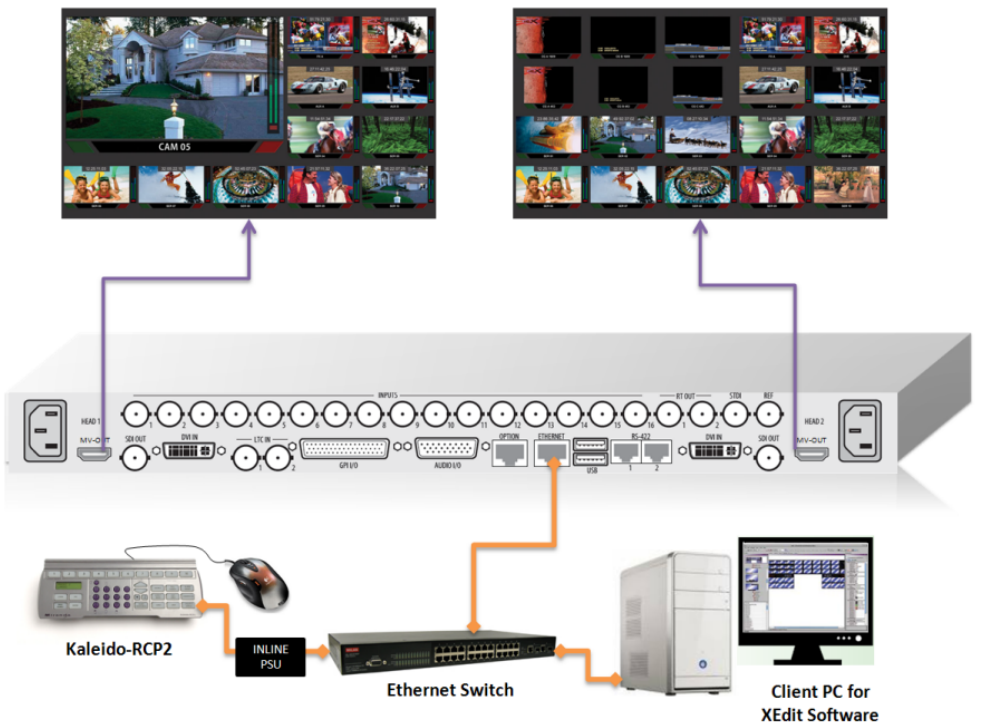
Note: You can also use the 10 LAYOUT PRESETS buttons on the RCP2 to load the associated default layout to the monitor wall.

Cabling Diagrams

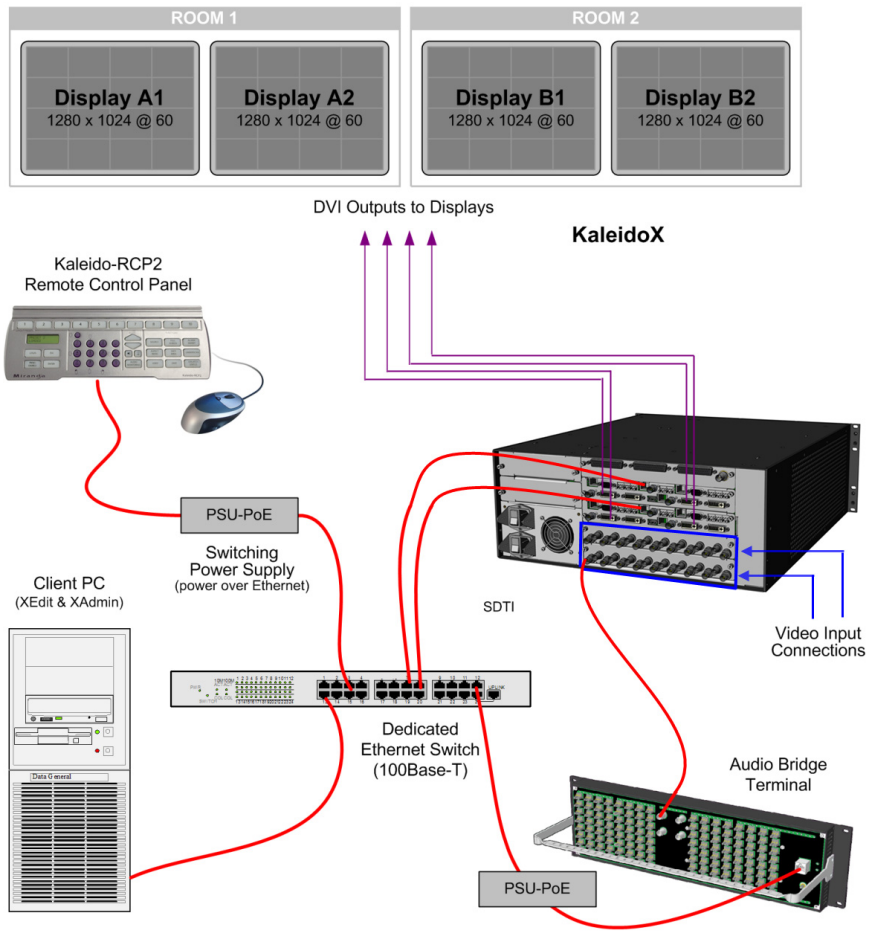
KMV-3901/3911



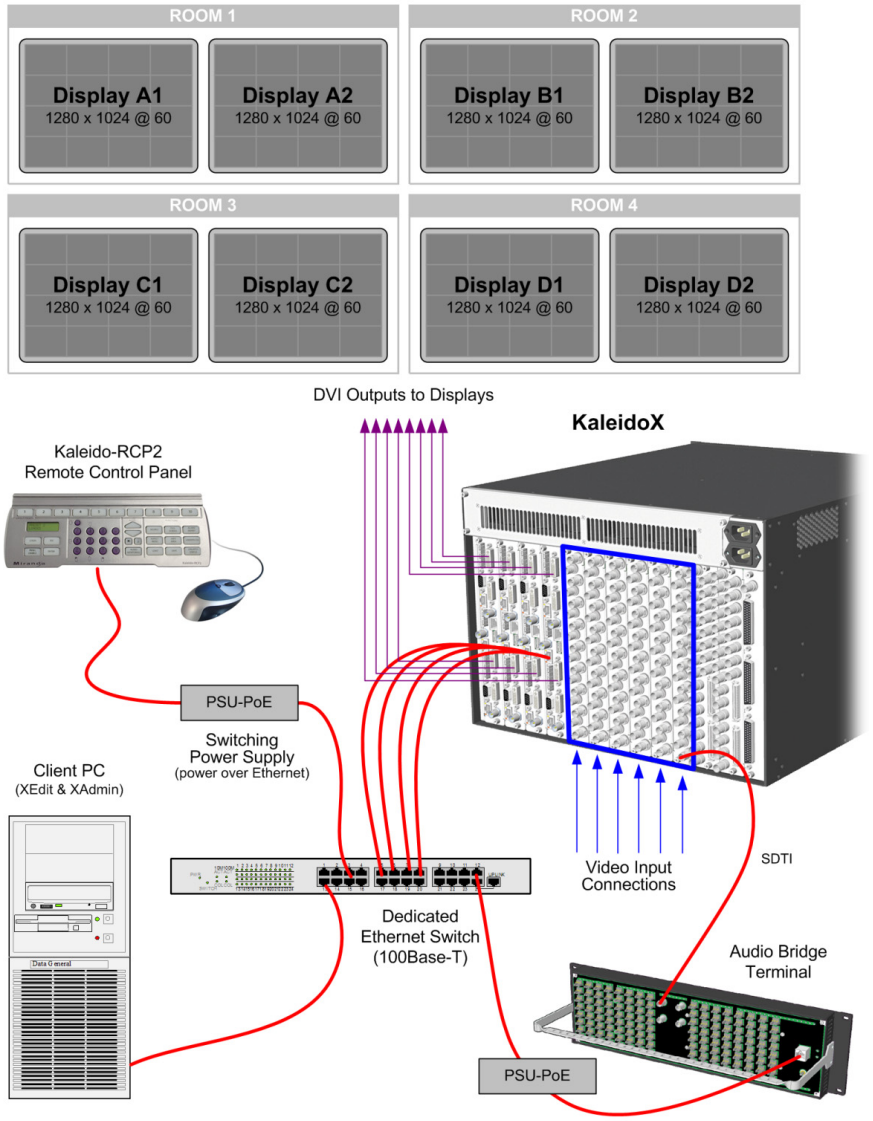
Kaleido-X16


CAM 05
Kaleido-RCP2
INLINE PSU
Ethernet Switch
Client PC for XEdit Software

Kaleido-X (4RU)



Kaleido-X (7RU)



Kaleido-X (7RU) x 2

Refer to the “Kaleido-X (7RU) Expansion” chapter in the Kaleido-X (7RU) Hardware Description & Installation Manual.

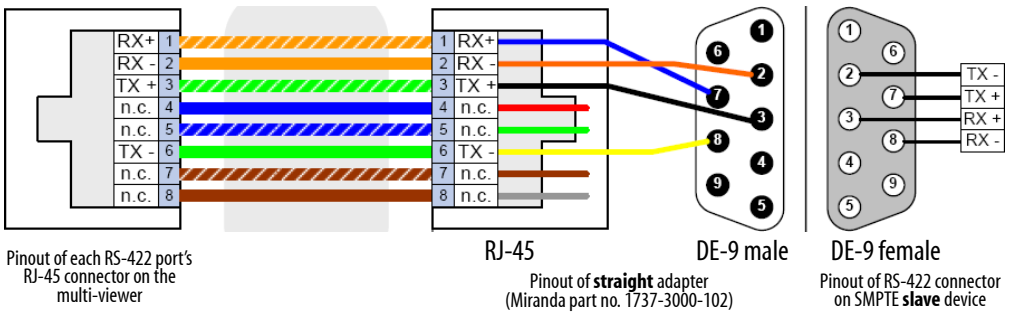
RS-422 Connection Diagram

> **Note:** For information on the **KMV-3911** multi-viewer's RS-422 interface, refer to the *KMV-3911 Guide to Installation and Operation*, available on the DVD that shipped with your system.

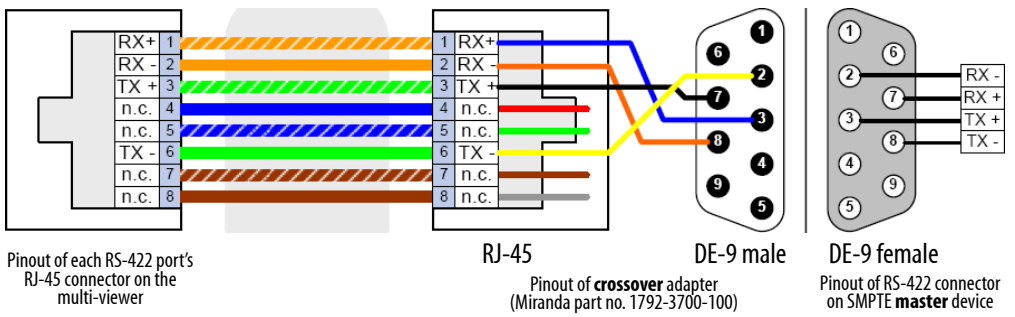
In the case of a **Kaleido-X** multi-viewer, each output card supports one RS-422 port over an RJ-45 connector. The **Kaleido-X16** supports two RS-422 serial inputs over RJ-45 connectors. These inputs allow the multi-viewer to connect to external serial devices such as a router, production switcher, or router controller.

> **Note:** The RS-422 ports each have an RJ-45 connector in order to preserve space on a busy panel. The RS-422 interface specifies a DE-9 connector, so if you are using this interface, you will require a DE-9-to-RJ-45 adapter. Miranda supplies two adapter models, correctly wired for this application: a straight adapter (part no. 1737-3000-102), and a crossover adapter (part no. 1792-3700-100).

The pinout for the RS-422 signals on the Kaleido-X16's RJ-45 connectors, and the wiring diagrams for the appropriate adapters, are shown here:



Standard wiring between multi-viewer and devices wired to SMPTE "slave" specification (e.g. most routers, Ross Synergy switchers, Nevion ETH-CON)



Standard wiring between multi-viewer and devices wired to SMPTE "master" specification (e.g. Philips Jupiter router control system, Miranda Presmaster PCS)

Note: The two RS-422 ports on the multi-viewer side have no ground pin. Using the appropriate DE-9S-to-RJ-45 adapter, an external device should be able to communicate with a multi-viewer despite the lack of a ground.

XEdit Application Shortcuts

The following is a list of shortcut keys available in XEdit to execute specific actions.

Action	Shortcut Key
Restore the factory resolutions	Ctrl+Shift+E
Restore the factory audio scales	Ctrl+Shift+A
Restore the factory calibrations	Ctrl+Shift+C
Restore the factory widget libraries	Ctrl+Shift+L
Toggle the grid	Ctrl+Shift+G
Toggle the Tips pane	Ctrl+Shift+H
Toggle the Properties pane	Ctrl+Shift+P
Toggle the layout navigator	Ctrl+Shift+N
Toggle the status bar	Ctrl+Shift+S
Toggle the Tools pane	Ctrl+Shift+T
Cut	Ctrl+X
Copy	Ctrl+C
Paste	Ctrl+V
Duplicate	Ctrl+D
Create grid-type layout based on selection (Auto-layout)	Ctrl+M
Select all	Ctrl+A
Send to back	Ctrl+B
Send to front	Ctrl+R
Delete selection	Delete

Action	Shortcut Key
Redo last operation	Ctrl+Y
Undo last operation	Ctrl+Z
Unlock composite	F2
Zoom in	Ctrl+plus sign
Zoom out	Ctrl+minus sign

3 Operation of the Monitor Wall

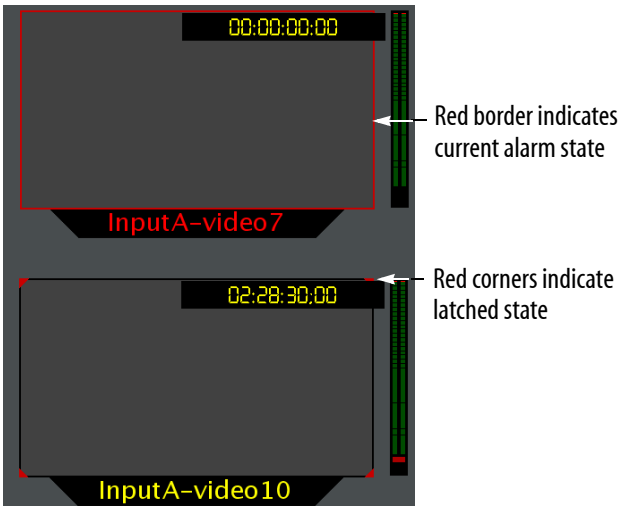
This section introduces the Kaleido-X monitor wall features.

Key Concepts

Monitor wall	The *monitor wall* refers to the group of display screens that are connected to the output modules of a specific Kaleido-X system.
Room	A *room* is a visual grouping of display screens. A room represents the physical displays, positioned and sized as viewed by the user in an actual room. Rooms can include *full screen zones*, and are defined and configured by using the XEdit application. See "Logging on to the Monitor Wall Using the Kaleido-RCP2" on page 35.
Automatic resolution detection	*Automatic resolution detection* eases the initial setup of a new display monitor by automatically determining the best resolution supported by the display. This ensures that the multi-viewer will be configured for the best video quality. When a new display is connected, the multi-viewer will detect the EDID of the display on boot-up, and will set the correct resolution accordingly. This means that displays can be hot-swapped. If an existing display is replaced by a new one, the Kaleido-X will automatically change the resolution without the need for a system restart. See "Setting a Display Monitor's Output Resolution" on page 59.

Layout	A *layout* refers to a visual grouping of monitors on the monitor wall. Layouts are specific to a room, and created by using the XEdit application. Full screen layouts, also defined in XEdit, are specific to a full screen zone within a particular room. See "Loading Layouts" on page 38, and "Displaying a Source in Full Screen Mode" on page 41.
Dashboard	The *dashboard* is a window that contains the system name, IP address and software build version. It also displays error messages. The dashboard is displayed at the bottom right of each display, on the monitor wall: See "Displaying the Dashboard" on page 36, and "Hiding the Dashboard" on page 37.
Monitor	A *monitor* (also called a *widget*) is a graphical element that is part of a layout. XEdit supports several types of primary elements (clocks, timers, video monitors, audio monitors, UMDs, time code monitors, alarm monitors, etc.), that can be grouped into composite monitors.
Logical source	A *logical source* (called a *channel,* in earlier versions of the documentation) refers to a group of physical audio, video, or metadata sources, and text attributes. A logical source can be used as a whole, and assigned to a virtual monitor. See "Assigning Sources to Monitors" on page 48.
Video monitor	A *video monitor* is a layout element used to define an area for displaying a video signal. Within a video monitor, the *video window* is the active area where the video signal is displayed.
Composite monitor	A *composite monitor* (also referred to as a *composite*, a *monitor* or a *tile*) is a group of primary elements that can be seen as a single object within a layout. Composite monitors typically include a video window, one or more audio level meters, and a UMD with two tallies.
Safe area	The *safe area* is a configurable region inside a video window. The safe area markers delimit this region (e.g. a 4:3 region inside a 16:9 window). See "Toggling Safe Area Markers" on page 43.
Audio monitor	An *audio monitor* (also called *audio level meter* or *ALM*) is a layout element that provides a visual representation of sound. See "Triggering Audio Monitoring" on page 58.
UMD	An *under monitor display* (*UMD*) has a *text label* that can be static or updated by a peripheral device. It can also have *left and right tally indicators*. The UMD usually indicates the name of the video source seen in a video monitor. See "Editing UMD Text" on page 47, and "Selecting an Input Method" on page 47.

Time code monitor	A *time code monitor* displays the Ancillary Time Code (ATC) from an HD video signal, or the time code found in an embedded SDI video signal, part of the vertical interval of an analog signal (VITC), or other external Linear Time Code (LTC). Time code monitors can be used for monitoring the duration of programs.
Timer	A *timer monitor* is based on a *timer* defined within the Kaleido-X system. Three timer modes are available: (1) UP: timer counts up starting from zero up to a preset time, (2) DOWN: timer counts down from a preset time to zero, and (3) REMAINING: timer counts down from the current time until it reaches a preset time. Timers are defined and configured in XEdit. They can be slaved to production timers, assigned to logical sources, assigned to rooms or specific RCP users, and controlled from the Kaleido-RCP2. See "Using Timers" on page 53.
Clock	A *clock* is the visual representation of time in a video or display. It can be based on a reference LTC signal or on the Kaleido-X system time. Clocks can be in a digital or analog format. **Note:** The KMV-3901/3911 supports digital clocks only.
Action	An *action* is an operation automatically performed in response to a specific trigger. *Monitor wall actions* are directly associated with layout elements. *Background (floating) actions* are actions that are global to the Kaleido-X system. Unlike monitor wall actions, background actions are always available. See "Triggering Actions" on page 56.
Trigger	A *trigger* is an event that triggers an action. An example of a trigger could be a double click on a monitor. Background actions are triggered by alarms or by Gateway commands. In XEdit, when defining an action for a layout element, you could specify, for instance, that a specific full screen layout be displayed on the monitor wall in response to the trigger.
Alarm monitor	*Alarm monitors* help you see the status of global and virtual alarms, but their use is not limited to this type of alarms. When any alarm level is assigned to an alarm monitor, the status of this alarm will be shown. When using the global alarm at the text label level, it will display the text value of the alarm, which is a readable name. See "Configuring Alarm Monitors" on page 216.
Alarm latch	To prevent operators from missing temporary alarms on the monitor wall, layout elements that are capable of displaying an alarm status (e.g. video monitors, UMDs, alarm monitors) can be configured with a latching mechanism. An *alarm latch* will keep the error state visible until someone acknowledges the associated alarm. Video monitors can provide alarm status information through their borders' color and blinking behavior, and show the latched state as small indicators in each corner of the video window. UMDs (text and tallies) and alarm monitors can change their text or background color and blinking behavior, to reflect the alarm status and show the latched state through their borders.



See "Configuring a Video Monitor's Alarm Reporting Behavior" on page 196, "Configuring a UMD's Alarm Reporting Behavior" on page 214, and "Configuring Alarm Monitors" on page 216, for details on configuring the alarm reporting and latching attributes for these layout elements.

The Kaleido-X system tracks the latched state of all alarm levels in a logical source at all times, even when alarms are not being monitored on the wall, or via SNMP traps or background actions. It could thus happen that some layout elements will show a latched status indicator after a layout is loaded, even if the current state of the corresponding alarm is normal and the alarm was not monitored in the previous layout (the alarm occurred on the feed while the feed was not monitored).

- Latching only occurs when an alarm severity is above normal (i.e. minor, major, or critical). All other alarm states (unavailable, unassigned, pending, unknown, etc.) are not latched.
- Unlatching a global alarm unlatches all its contributing alarms. Unlatching the last alarm contributing to a global alarm unlatches the global alarm itself.
- The color of the latch indicator reflects the highest level of alarm received since the corresponding alarm was last unlatched.

Crosspoint	A multi-viewer can control upstream routers, and it can also be controlled as a router itself. In addition, some multi-viewer models—Kaleido-X16, Kaleido-X (7RU), and Kaleido-X (7RU) × 2—can have optional router outputs. A crosspoint is the link inside a router between a source (input) and a destination (output). See "Changing Crosspoints" on page 50. **Note:** As of Kaleido-X version 5.20, the preferred method of controlling sources, regardless of whether they are sources from an upstream router or physical multi-viewer inputs, is to configure logical sources.

Detailed Directions

This section describes the actions you can perform on the Kaleido-X monitor wall.

Logging on to the Monitor Wall Using the Kaleido-RCP2

As a network device, the Kaleido-RCP2 provides access to any room, from any Kaleido-X system on the network. As a security measure, access is controlled by a login procedure. More than one Kaleido-RCP2 can be used by multiple users to access the same room concurrently. When multiple RCP users are active in the same room, they each control a separate pointer on the monitor wall, and can use the monitor wall menu independently, as long as they limit their actions to separate displays.

To log on to a Kaleido-X room:

1. On an RCP2 with an active connection to the network, press and hold the ENTER button until the ESC button lights up. The **Configuration** menu appears, with the ROOM SELECTION option displayed.
2. Press ENTER again to obtain the list of rooms from the Kaleido-X systems that are currently available on the network.

   The rooms are listed in the form [multi-viewer name]/[room name]. If a room belongs to a cluster system, its name appears once for each of the member multi-viewers (e.g. if two multi-viewers, KX1 and KX2, are configured as a cluster, and ROOM1 includes displays fed by both multi-viewers, then both KX1/ROOM1 and KX2/ROOM1 will be listed. You may select either one.

   > **Note:** By default, in the case of a Kaleido-X (7RU), the two head (DVI/VGA) outputs from each of the Output A, B, C and D cards are assigned to ROOM1, ROOM2, ROOM3 and ROOM4 respectively. Likewise, in the case of a Kaleido-X (4RU), the two heads associated with Output A are assigned to ROOM1, and the two heads associated with Output B are assigned to ROOM2.

3. In the room list, select the room you wish to access by pressing the **2** key (to move up in the list) or the **8** key (to move down the list).
4. When the appropriate room name is highlighted, press ENTER to accept the new selection, and then press ESC to exit the **Configuration** menu.
5. Press the LOGIN key.

   The following message will appear on the LCD display:

   LOGIN Position
   Admin
6. Select your user name by pressing the **2** key (to move up in the list) or the **8** key (to move down the list).
7. When you user name is highlighted, press ENTER.

8. When prompted, type the password for this user name, then press ENTER.

> **Note:** By default, the user name "Admin" has no password.

The message "Access granted" will appear on the LCD display if the login is successful. If a mouse is connected to the RCP2, then you should be able to see and move the mouse pointer on the monitor wall. Alternatively, use the RCP2's mouse-function keys.

> **Notes**
>
> - If at any time the message "Target system is offline" or "No login list available" appears on the LCD display, press the ESC, ENTER and DEL keys simultaneously and go back to step 1.
> - If the room you were logged on to is part of a cluster system, try accessing it from a different multi-viewer (e.g. select KX2/ROOM1 instead of KX1/ROOM1, from the room list).
> - The pointer may flicker when two RCP users access displays fed by the same output card.
> - Two users accessing the same display will be limited to sharing a single pointer.

For more information on the Kaleido-RCP2, please refer to the *Kaleido-RCP2 Guide to Installation and Operation*, available on the DVD that shipped with your system.

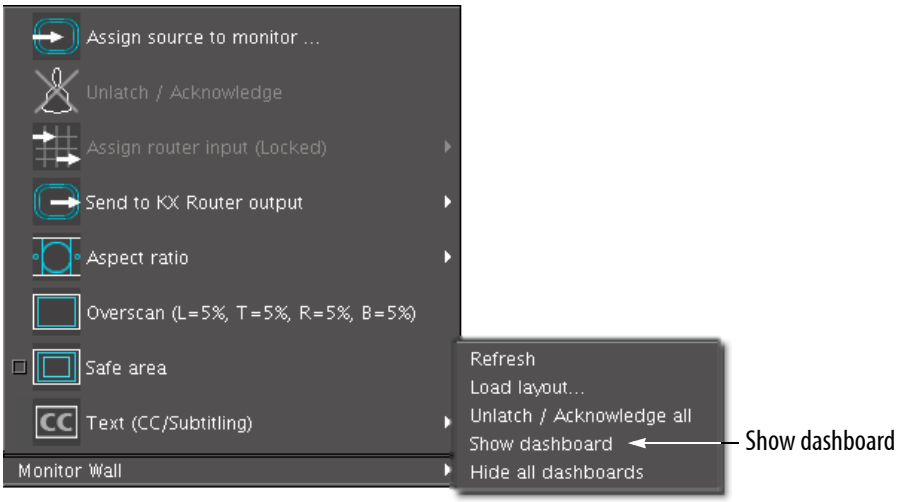
Displaying the Dashboard

Whenever your Kaleido-X detects an error, it will automatically display the dashboard on every monitor of the monitor wall. When all errors are resolved, then the system automatically closes the dashboard on every monitor. You can also display the dashboard as needed, to view the Kaleido-X system name, IP address, software version and current error messages. In such cases you must close the dashboard manually.

> **Note:** It is possible to disable the automatic display of the dashboard on specific displays. See "Disabling the Dashboard" on page 166 for details on how to configure this option.

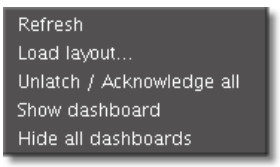
To display the dashboard:

1. Right-click anywhere on a monitor. On the shortcut menu, point to **Monitor Wall**, and then click **Show dashboard** to display the dashboard associated with the current head:

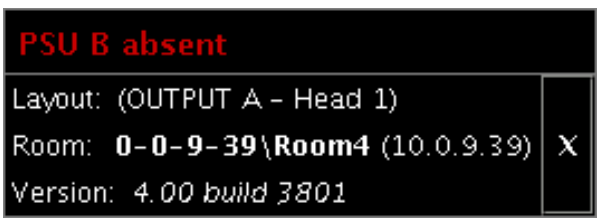


Monitor wall shortcut menu (from composite monitor shortcut menu)

Note: If you right-click the monitor wall background directly, then the monitor wall shortcut menu appears immediately, and you can click **Show dashboard** directly:



After a brief delay, the dashboard appears at the bottom-right corner of the monitor, and the command **Hide dashboard** replaces **Show dashboard** on the menu:

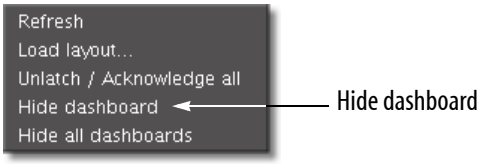


Dashboard on the monitor wall

Hiding the Dashboard

To hide the dashboard:

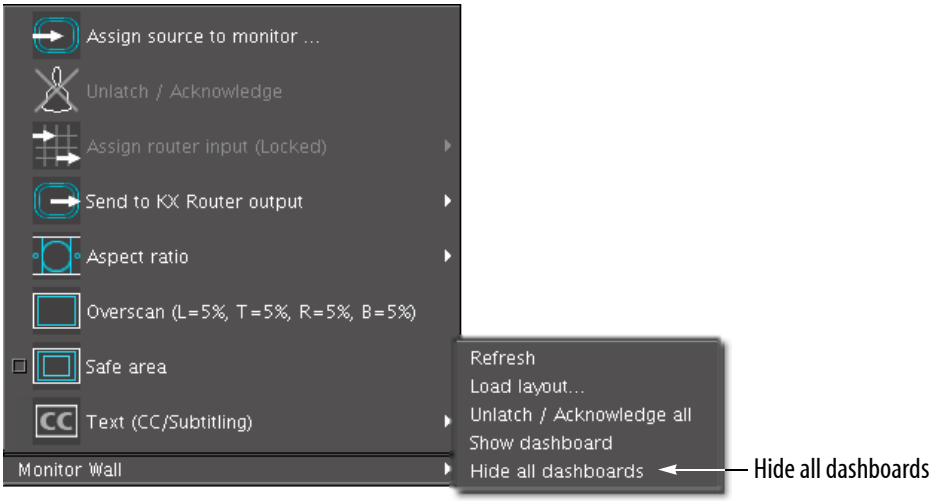
- Click the × button at the bottom-right corner of the dashboard. Alternatively, right-click anywhere on the monitor wall, point to **Monitor Wall** on the shortcut menu (if you clicked a layout element), and then click **Hide dashboard** to hide the dashboard on the current display:



Note: Clicking the × button closes the dashboards on every display monitor in the room if they were displayed automatically.

To hide all the dashboards:

- Right-click anywhere on the monitor wall, point to **Monitor Wall** on the shortcut menu (if you clicked a layout element), and then click **Hide all dashboards** to hide the dashboard on every display in the room:



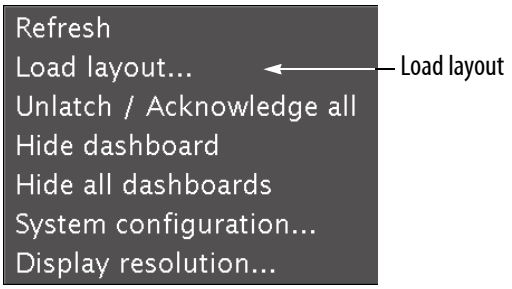
Note: When a dashboard is closed while the system is in an error condition, it will automatically reappear after 60 minutes, or when a new error occurs.

Loading Layouts

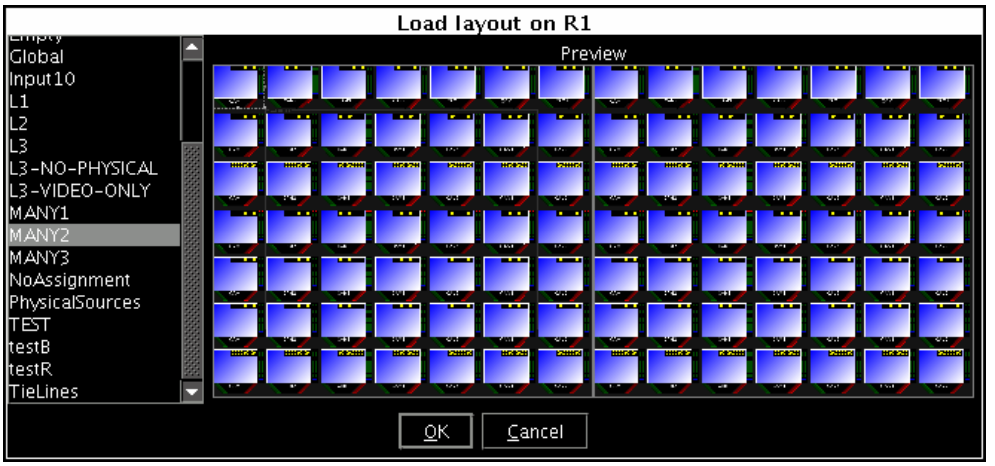
Loading a Layout by Using the Mouse

To load a layout on the monitor wall, by using the mouse:

1. Right-click the anywhere on the monitor wall, point to **Monitor Wall** (if you clicked a layout element), and then click **Load layout** on the shortcut menu:



The layout chooser appears:



2. Select the layout you wish to load, from the set of layouts defined for this room, and then click **OK**.

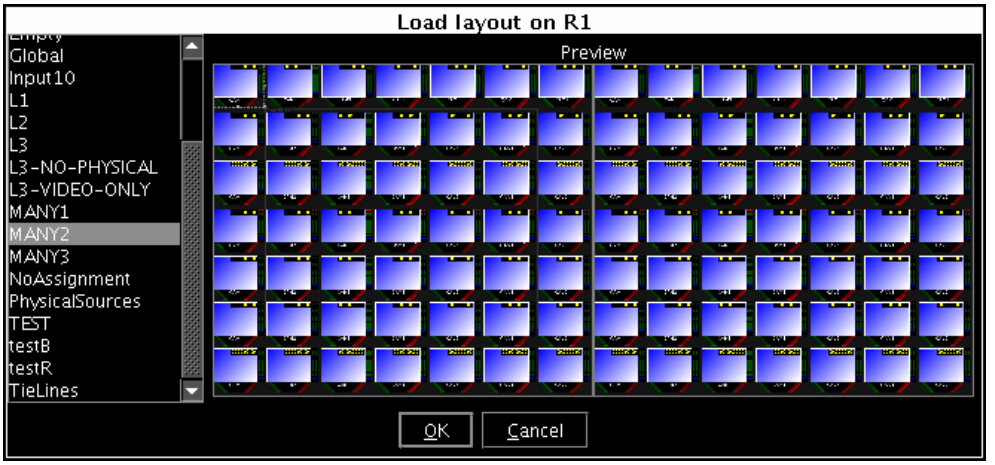
   The new layout appears on the monitor wall.

Loading a Layout by Using the RCP2

To load a layout on the monitor wall, by using the RCP2:

1. Press LOAD on the RCP2.

   The layout chooser appears:



2. Select the layout you wish to load, from the set of layouts defined for this room, and then click **OK**.

   The new layout appears on the monitor wall.

Using Layouts Presets

To toggle layouts using the RCP2's preset buttons:

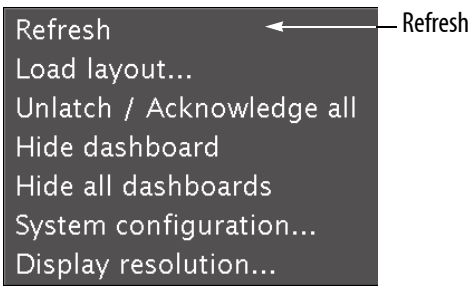
- Press the appropriate preset button (1-10) on the RCP2.

  The layout associated with the preset button for the current user will be loaded onto the monitor wall. See "Assigning Room Layouts to an RCP User's Presets" on page 280 for more details.

Refreshing a Layout

To refresh a layout:

- Right-click anywhere on the monitor wall, point to **Monitor Wall** (if you clicked a layout element), and then click **Refresh** on the shortcut menu:



Locating the Mouse Pointer on the Monitor Wall

If you have a cluster system, the monitor wall may comprise a large number of display screens, where the mouse pointer location is not always obvious.

To locate the mouse pointer on the monitor wall:

- Click the middle mouse button.

  A more recognizable square shape appears around the pointer.

Displaying a Source in Full Screen Mode

To display a source in full screen mode:

1. Move the pointer over the video source you wish to display in full screen mode.
2. Press FULL SCREEN on the RCP2.

   The full screen layout assigned to the current user is loaded into the full screen zone.

To close the full screen view:

- Move the pointer over the full screen zone, and then press FULL SCREEN again, on the RCP2.

> **Note:** A full screen layout can also be loaded by configuring actions in XEdit. See "Managing Layouts" on page 173, for information on creating a full screen layout, and refer to "Creating Actions" on page 237, for detailed instructions.

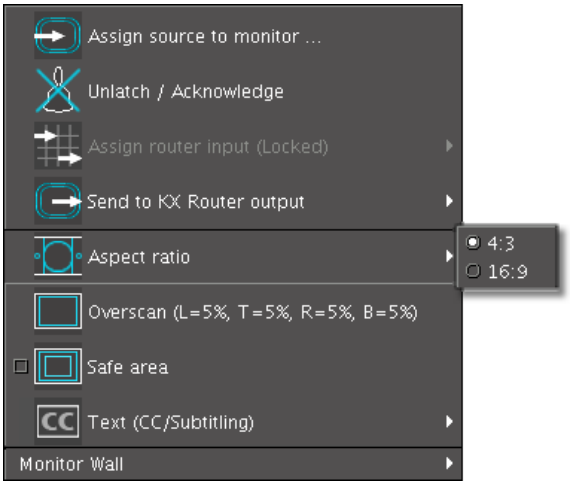
Changing a Source's Aspect Ratio

To change the aspect ratio using the RCP2:

- Move the pointer over the video source whose aspect ratio you wish to change, and then press ASPECT RATIO on the RCP2. Continue pressing ASPECT RATIO to toggle between the available aspect ratio options (4:3, 16:9, and possibly a third custom aspect ratio if one was defined in XEdit for the monitor).

To change the aspect ratio using the mouse:

1. Right-click the video source.
2. On the shortcut menu, point to **Aspect Ratio**, and then click **4:3** or **16:9**:



Note: There may be one more choice on the menu if you set a custom aspect ratio in XEdit, for this monitor. See "Setting a Video Monitor's Aspect Ratio" on page 187.

The video is resized accordingly within the layout.

Video Cropping/Zooming

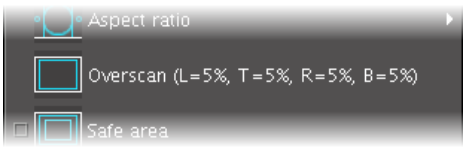
To toggle the cropping mode using the RCP2:

- To change the current cropping mode, move the mouse pointer over the video signal you wish to change, and then press the UNDERSCAN button on the RCP2. Continue pressing UNDERSCAN to toggle between underscan and overscan mode.

To toggle the cropping mode using the mouse:

- Right-click the video source.

  If the video is in underscan mode, then the shortcut menu will allow you to change to overscan:



  If the video is in overscan mode, then the shortcut menu will allow you to change to underscan:

Notes

- The overscan margins are set to 5% by default. They can be customized in XEdit.
- In the case of a KMV-3901/3911 multi-viewer, up to 10% cropping is supported.
- Safe title area and aspect ratio markers follow the video signal (e.g. if the safe title is within 5% of top, left, right and bottom, then when the video is in default overscan mode, the safe title will not appear).

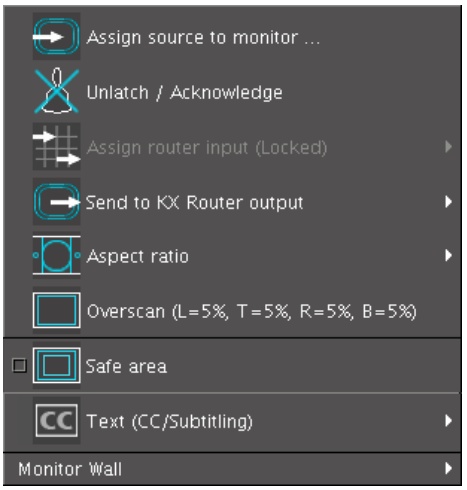
Toggling Safe Area Markers

To toggle the safe area markers on a video using the RCP2:

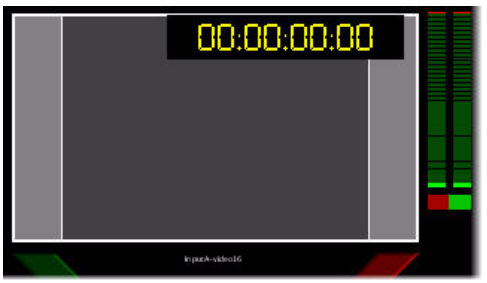
- Move the pointer over the video source, and then press SAFE AREA on the RCP2. Continue pressing SAFE AREA to toggle the markers.

To toggle the safe area markers on a video using the mouse:

1. Right-click the video source, and then click **Safe Area** on the shortcut menu:



   The safe area markers appear inside the video window:



2. Click **Safe Area** again on the shortcut menu, to hide the markers.

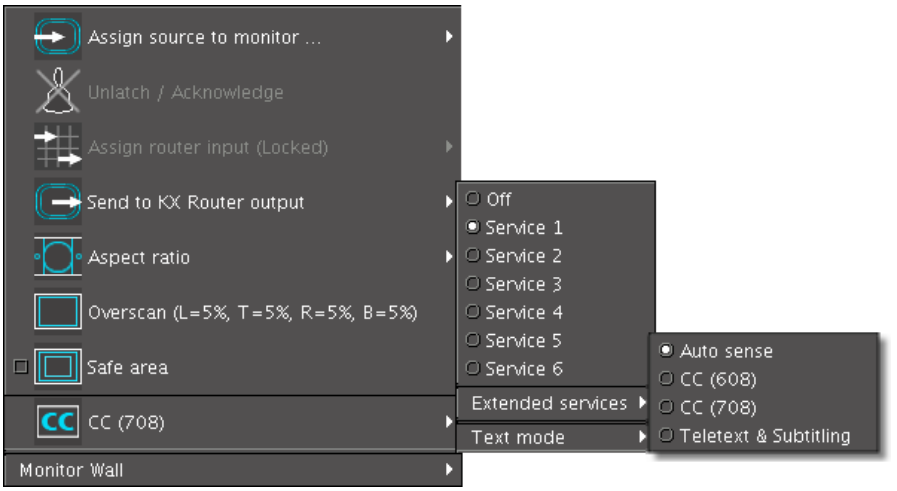
Displaying Subtitles and Closed Caption Text

Note: The KMV-3901/3911 multi-viewers do not support displaying of subtitles and closed captions.

Setting the Text Mode

To change the text mode for a video monitor:

1. Right-click the appropriate video source on the monitor wall.
2. On the shortcut menu, point to the current text mode indicator —either **CC (608)**, **CC (708)**, **Text (CC/Subtitling)**, or **Teletext & Subtitling**—, then point to **Text mode**, and click the text mode you wish to apply:



To prevent the shortcut menu from being too crowded by CC (608), CC (708) and Teletext/Subtitling options, its content (label, icon and available choice) changes, depending on the current video format:

Signal type	Text Mode	Icon	Label	Available choices
SD-SDI/CVBS 525	Auto		CC (608)	**CC (608)** (**Off**, **CC1**), **Text mode** sub-menu
Any	CC (608)			
SD-SDI/CVBS 625	Auto		Teletext & Subtitling	**Subtitling** (**Off**, **Page A**, **Edit pages**), **Text mode** sub-menu
Any	Teletext & Subtitling			
HD-SDI	Auto		CC (708)	**CC (708)** (**Off**, **Service 1** to **Service 63**), **Text mode** sub-menu
Any	CC (708)			

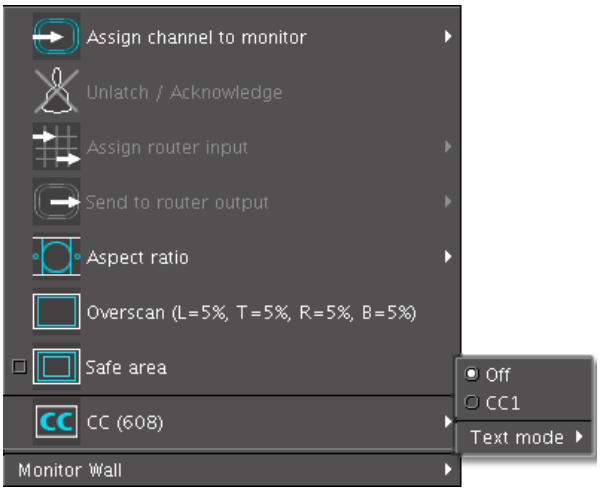
Signal type	Text Mode	Icon	Label	Available choices
Other / Unknown	Auto		Text (CC/ Subtitling)	**Enable text** check box, **Text mode** sub-menu.

Switching Closed Captioning On/Off

> **Note:** The KMV-3901/3911 multi-viewers do not support extraction of closed captions.

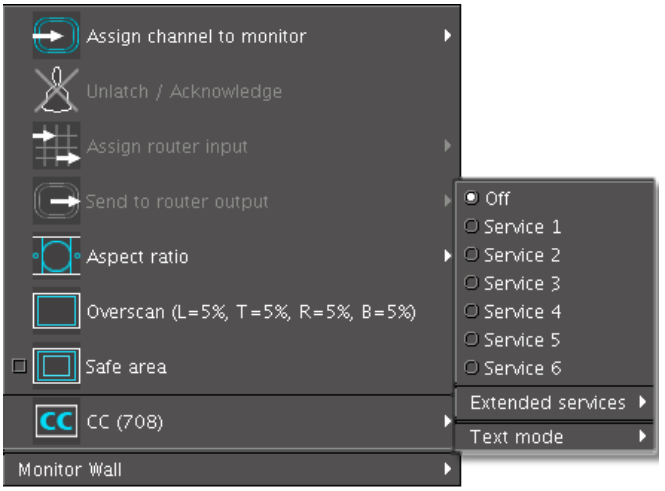
To switch CC (608) closed captioning on/off:

1. Right-click the appropriate video source on the monitor wall.
2. On the shortcut menu, point to **CC (608)**, and then click either **CC1** or **Off**:



To switch CC (708) closed captioning on/off:

1. Right-click the appropriate video source on the monitor wall.
2. On the shortcut menu, point to **CC (708)**, and then click either the appropriate service number or **Off**:

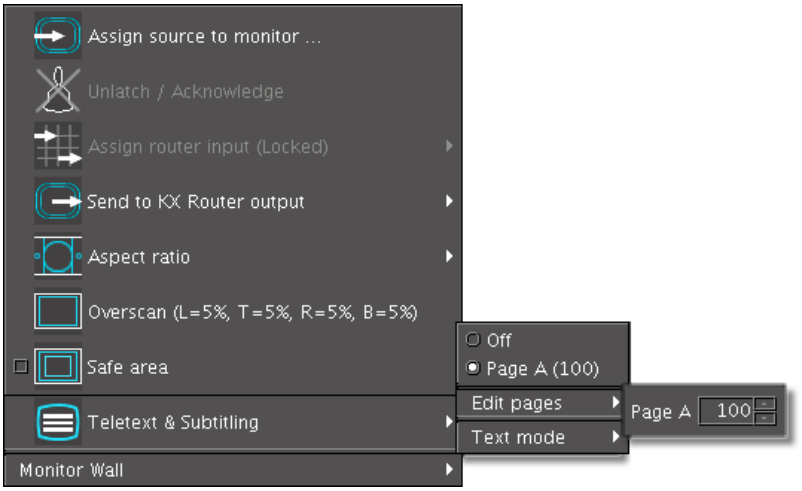


Note: The shortcut menu displays **Service 1** to **Service 6**. Use the **Extended services** sub-menu to select from the **Service 7** to **Service 63** range. When an extended service is enabled it is added to the shortcut menu below **Service 6**.

Selecting a Teletext/Subtitle Page from the Monitor Wall

To change the decoded Teletext/Subtitle page for a video source on the wall:

- Right-click a video monitor, point to **Teletext & Subtitling**, and then click **Page A ([page number])** on the shortcut menu:



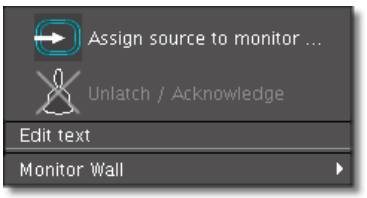
The shortcut menu displays **Page A (###)** where "###" is the number of the actual page being monitored (from 100 to 899).

It is possible to change the assignment using the **Edit pages** sub-menu. This menu allows you to configure the page selection for the current input.

Editing UMD Text

To edit the text on a UMD:

1. Right-click the UMD whose text label you wish to modify, and then click **Edit text** on the shortcut menu:



   The UMD text area becomes editable:

2. Type the new text, and then press ENTER on the RCP2 or external keyboard.

   The UMD displays the new text:

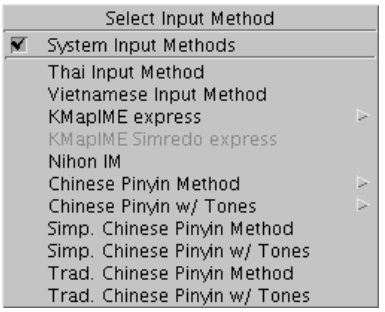
Selecting an Input Method

> **Note:** In the case of a KMV-3901/3911 multi-viewer, the current version of the Kaleido-X Software does not support input methods on the monitor wall. As a workaround, you can use XEdit, open the layout that contains the text you wish to modify (e.g. static UMD text), and then use the appropriate input method from your client PC or laptop.

To select an input method:

1. Click the appropriate video source on the monitor wall.
2. Press left Alt+Shift+1 on the external keyboard.

   The **Select Input Method** menu appears.
3. On the **Select Input Method** menu, click the appropriate input method:



You can now type text in your language of choice, using an external keyboard connected to the Kaleido-RCP2.

Assigning Sources to Monitors

Any monitor in a layout can be assigned a logical source in XEdit. It is possible to change the logical source assignment directly on the monitor wall.

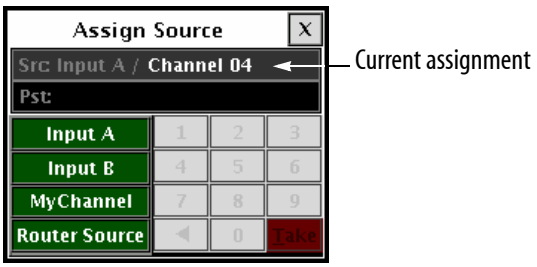
> **Note:** Logical source assignments can also be changed by configuring actions in XEdit. See "Creating Actions" on page 237 for more information.

Assigning a Logical Source to a Monitor by Using the RCP2

To assign a logical source to a monitor, by using the RCP2 CHANNEL button:

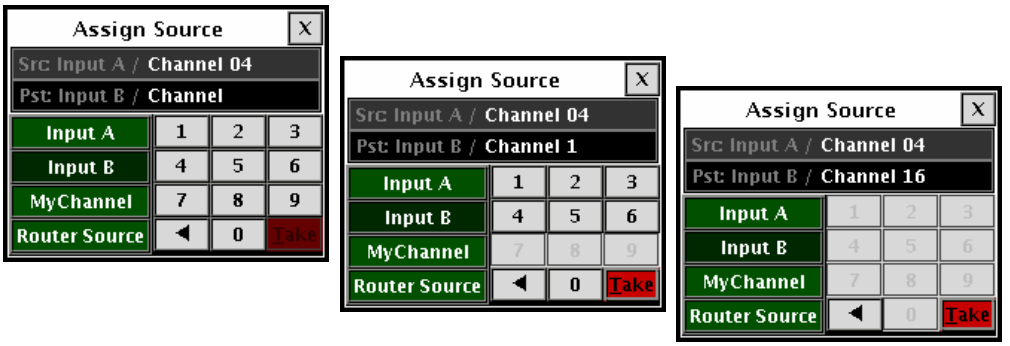
1. Move the pointer over the monitor that is to be assigned a logical source, and then press CHANNEL on the RCP2.

   The **Assign Source** window appears:



   The label of each category/index button in **Assign Source** is based on recurring strings found in the logical source names available for your system. The **Src** box shows the current assignment.

2. Click through the categories until the **Pst** box shows the logical source you wish to assign to the selected monitor. For example, if you wish to assign the logical source named "/Input B/Channel 16" to the monitor, click **Input B**, **1**, and then **6**:



3. Click **Take**.

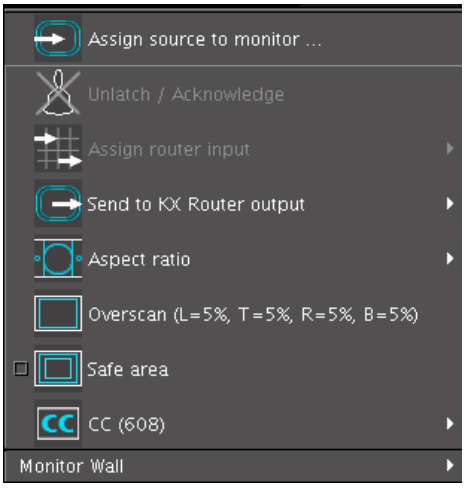
   The selected logical source is now assigned to the monitor.

4. Click the **X** button to close the **Assign Source** window.

Assigning a Logical Source to a Monitor by Using the Mouse

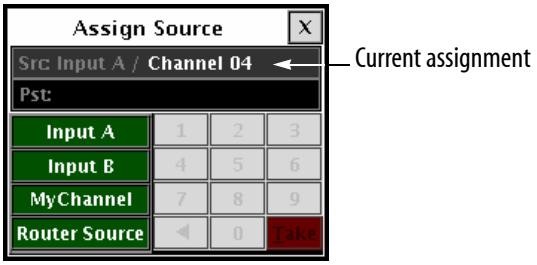
To assign a logical source to a monitor, by using the mouse:

1. Right-click the monitor that is to be assigned a logical source.
2. On the shortcut menu, point to **Assign source to [component]** (where [component] will be **monitor**, **video**, **UMD**, **tally**, **audio meter**, **status alarm**, **time code**, **metadata display**, or **clock**, depending on the monitor you clicked):



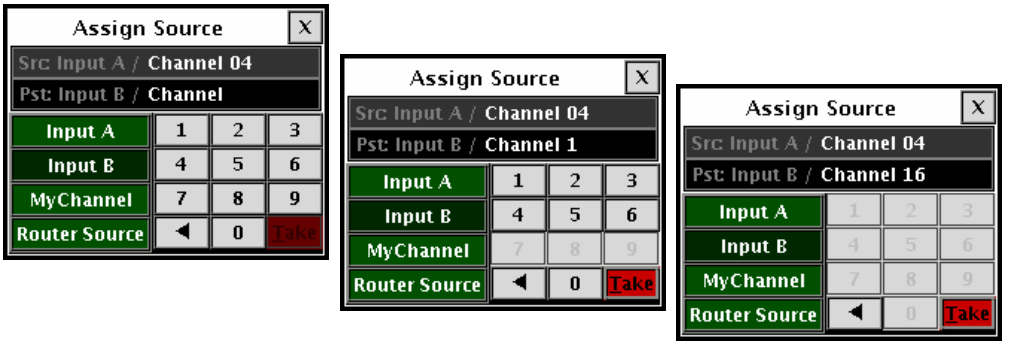
Assign source to monitor menu

   The **Assign Source** window appears:



The label of each category/index button in **Assign Source** is based on recurring strings found in the logical source names available for your system. The **Src** box shows the current assignment.

3. Click through the categories until the **Pst** box shows the logical source you wish to assign to the selected monitor. For example, if you wish to assign the logical source named "/Input B/Channel 16" to the monitor, click **Input B**, **1**, and then **6**:



4. Click **Take**.

   The selected logical source is now assigned to the monitor.

5. Click the **X** button to close the **Assign Source** window.

Changing Crosspoints

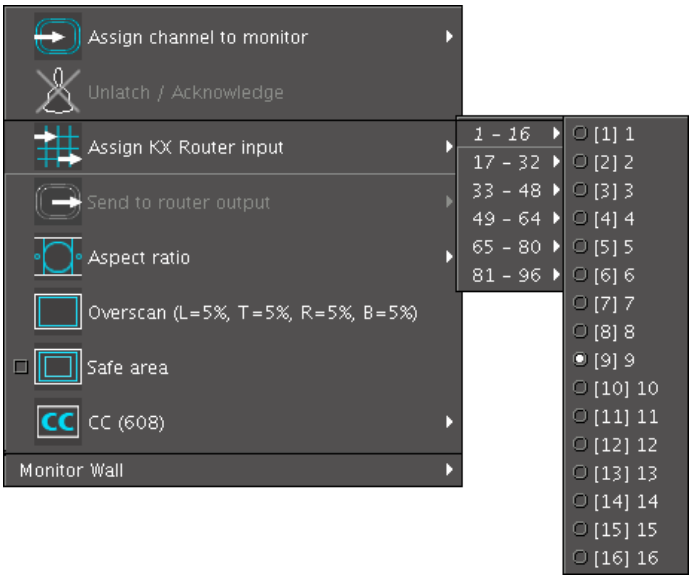
Changing an External Router Crosspoint

> **Note:** As of version 5.20 of the Kaleido-X Software, when a multi-viewer manages an upstream router, you should now manage the router's physical sources as logical sources within the multi-viewer system (see page 135). Router sources can thus be assigned to monitor wall elements transparently, just as sources connected directly to the multi-viewer's inputs (see "Assigning Sources to Monitors" on page 48). The KMV-3901/3911 multi-viewers do not support the procedure described below.

To change an external router crosspoint:

1. Right-click a composite or video monitor on the monitor wall.

2. On the shortcut menu point to **Assign [router] input** (where [router] will be the name of a logical router whose outputs are connected to the multi-viewer inputs), navigate to the input you wish to assign to the monitor, and then select it:



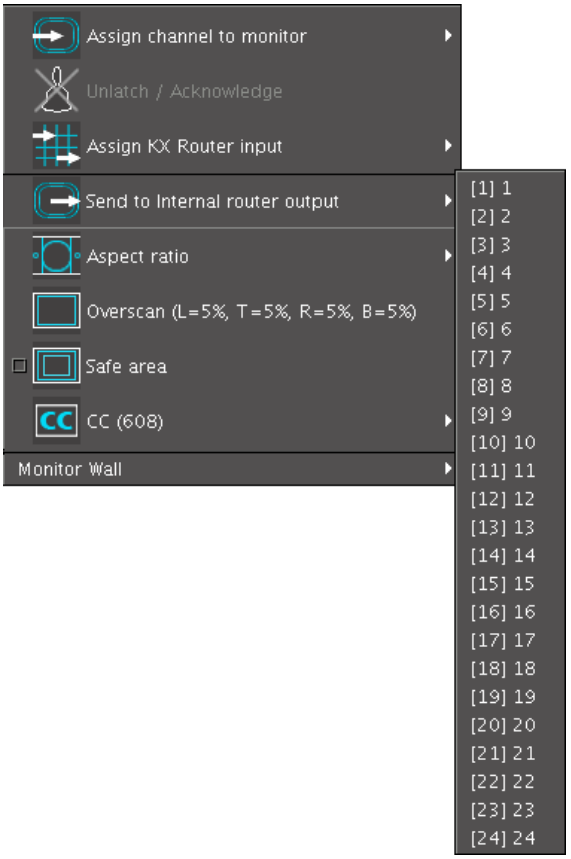
The multi-viewer requests the specified source signal from the router.

Changing an Internal Router Crosspoint

> **Note:** This feature is only available on Kaleido-X (7RU), Kaleido-X (7RU) × 2, and Kaleido-X16 multi-viewers, with the *SDI Router Output* option.

To change a crosspoint in the internal router:

1. Right-click the appropriate composite or video monitor on the monitor wall.
2. On the shortcut menu, point to **Send to [router] output** (where [router] will be the name of the first logical router mapped to your multi-viewer's router outputs), navigate to the appropriate logical output number, and then select it:



The source signal displayed on the monitor is routed to the selected destination.

Changing Logical Sources Assignments on a Kaleido-X Configured as a Router

To change a monitor's source assignment by using a router control device or application:

- Apply a crosspoint change to route the desired Kaleido-X logical source to the video monitor whose source assignment you wish to change on the monitor wall, in the same way you would do for any router controlled by the device or application you have.

  The video from the first video level assignment within the selected logical source appears in the video window.

  When the current layout is reloaded, either of the following two situations may apply:

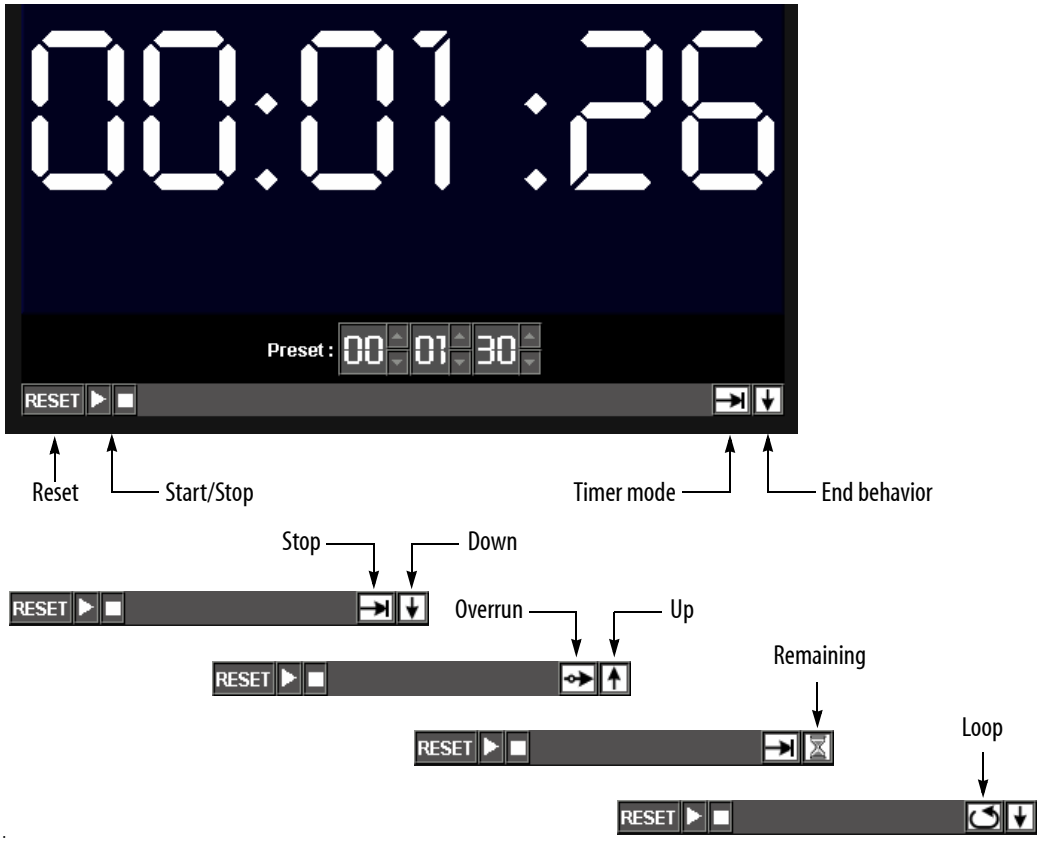
  — **No logical source:** If there was no logical source associated with the monitor, then the Kaleido-X will remember the new source assignment.

  — **Not a monitor wall destination:** If the monitor was not already configured as a monitor wall destination, then the layout will be reloaded in its initial state, as it was configured in XEdit.

Using Timers

Timers can be assigned to timer monitors in a layout. Any user can control such timers by using the timer monitor's buttons and shortcut menu. An RCP user can be assigned a specific timer. This allows using the numeric keypad on an external keyboard connected to the RCP2 to control the timer.

Controlling a Timer by Using the Timer Monitor's Buttons and the Shortcut Menu

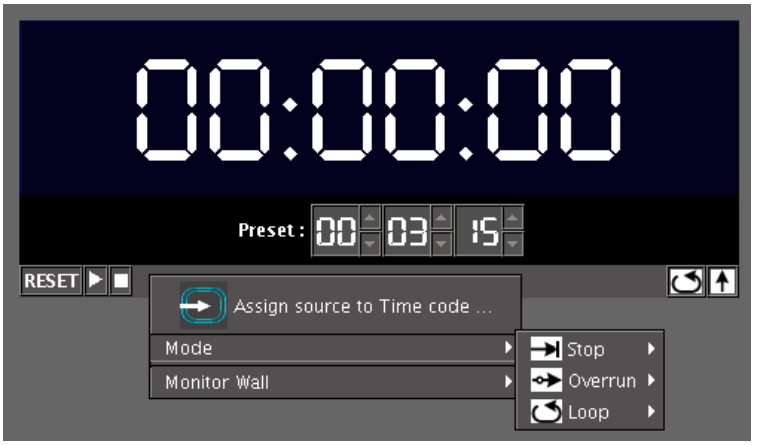


Notes

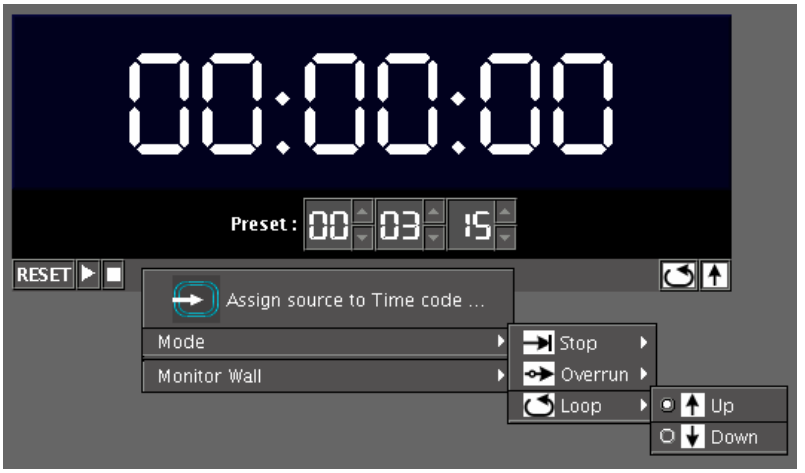
- Timer monitors display time in HH:MM:SS format. Even if the monitor is synchronized with an LTC source, frame count is not displayed.
- Using a timer monitor's **Reset**, **Timer mode** or **End behavior** buttons will stop the timer, if it was running.

To configure an interactive timer monitor on the monitor wall:

1. Right-click the timer you wish to configure:



2. On the shortcut menu, point to **Mode**, navigate to the appropriate timer mode, and then click the desired end behavior:

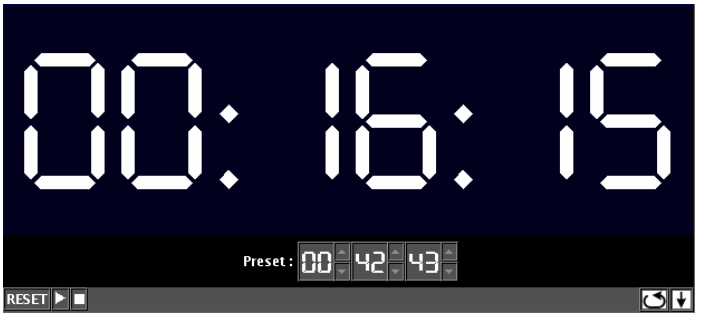


Alternatively, you can set the mode and behavior directly, by clicking the timer monitor's **Timer mode**, and **End behavior** buttons:

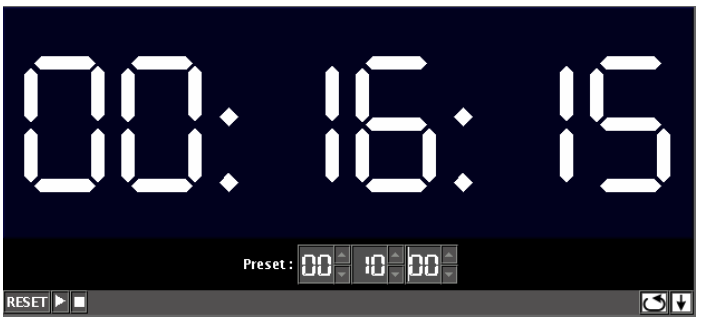
— Click the **Timer mode** button to select one of three modes: **Overrun**, **Stop** or **Loop**.

— Click the **End behavior** button to select one of three modes: **Down**, **Up** or **Remaining**.

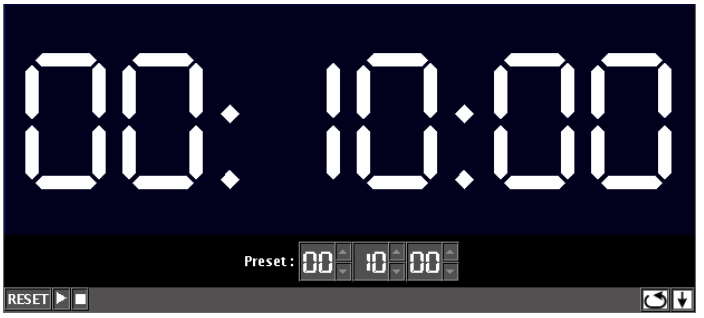
The timer monitor is updated accordingly:



3. Use the **Preset** controls to set a new preset time:



4. Click the **Reset** button to reset the timer to its initial value (based on timer mode and preset time):



5. Click the **Start** button to start the timer:

Controlling a Timer by Using an External Numeric Keypad

If a timer is assigned to the current RCP user, or else if a timer is assigned by default for the room, then the external keyboard's numeric keypad controls this specific timer.

> **Note:** The reserved keys are always enabled, whether Num Lock is set or not.

To configure your assigned timer, by using a numeric keypad:

- Press the slash key ("/") to set the timer mode and end behavior. Keep pressing the key to cycle through all the available options, until the buttons show the appropriate settings.
- Press the plus key ("+") to reset the timer. (This will also stop the timer if it was running.)

- Press the Enter key to start/pause the timer.
- Use the number keys to set or modify the preset time.

Triggering Actions

To trigger an action:

1. Move the pointer over a monitor associated with the action you wish to trigger.

   The pointer changes to a hand icon.

2. If the action is not triggered automatically, click or double-click the monitor.

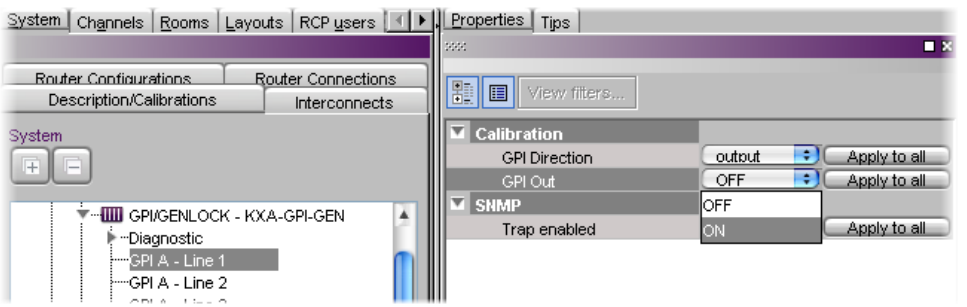
> **Note:** An Action's trigger is determined when the Action is created in XEdit. See "Creating Actions" on page 237 for more information.

Triggering GPI Output Events

To trigger a GPI output event:

1. In XEdit, configure the appropriate GPI line's direction as an output (system calibration).
2. Create an action to toggle the GPI output on/off state, and assign it to a monitor.
3. Export the database to the Kaleido-X.
4. Trigger the action by clicking the monitor.

   The GPI line's state changes.

> **Note:** GPI lines configured as outputs can have their state set manually for test purposes in XEdit's **System** tab:
>
> 
>

Acknowledging Alarms

Acknowledging Alarms on the Monitor Wall

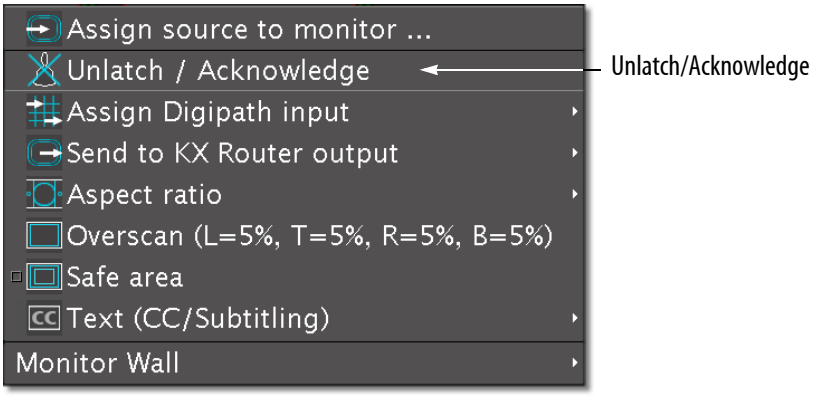
When you acknowledge an alarm, latched or current, the latched status is reset to normal (i.e. unlatched). If the alarm is acknowledged while its status indicates an error condition, the latched status is reset to normal, and will only go back to error if the alarm status returns to normal and then to error again.

To acknowledge an alarm, by using the RCP2:

- Move the pointer over the monitor whose alarm state you wish to acknowledge, and then press the UNLATCH STATUS button on the RCP2.

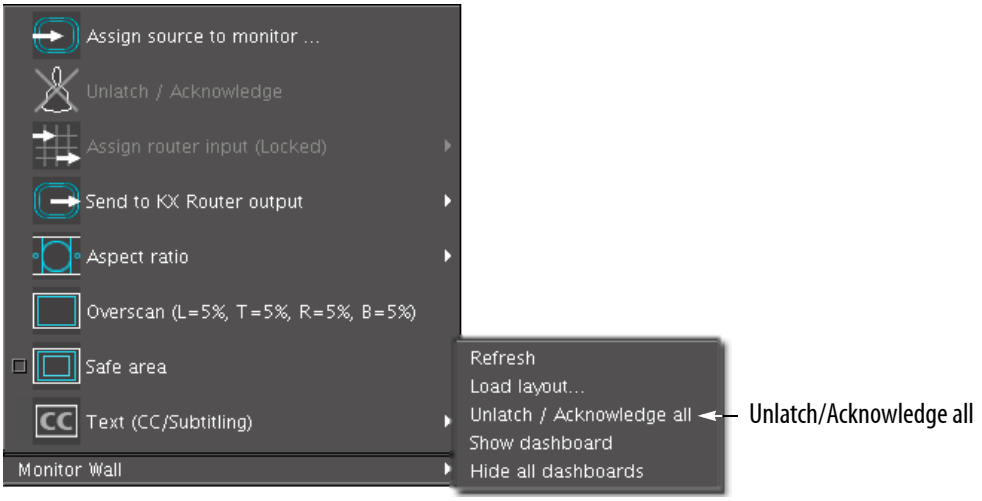
To acknowledge an alarm, by using the mouse:

- Right-click the monitor whose alarm state you wish to acknowledge, and then click **Unlatch/Acknowledge** on the shortcut menu:



To acknowledge all current alarms in a room:

- Right-click the monitor wall, point to **Monitor Wall** (if you clicked a monitor), and then click **Unlatch/Acknowledge all** on the shortcut menu:



This will acknowledge every alarm monitored *in the current room*.

Acknowledging Alarms by Using an Action

To acknowledge alarms, by using an action:

- Create a *Unlatch/Acknowledge all* action. This action can be assigned to a monitor on the monitor wall, or it can be a background action. See "Creating Actions" on page 237 for details.

Triggering Audio Monitoring

Triggering Audio Monitoring by Using the mouse or the RCP2

To trigger audio monitoring, by using the mouse or RCP2:

- Move the pointer over an audio monitor, and then click the monitor, or press AUDIO MONITORING on the RCP2.

  This will route *the monitor's audio source* to the monitoring output assigned to the current RCP user.

- Move the pointer over a video monitor, and then click the monitor, or press AUDIO MONITORING on the RCP2.

  This will route *the specific audio level associated with the video monitor,* based on the assigned logical source.

- Move the pointer over any other monitor, and then click the monitor, or press AUDIO MONITORING on the RCP2.

  This will route *the first audio level of the associated logical source* to the monitoring output.

  Audio monitors that have an audio monitoring indicator (see "Configuring Audio Monitors" on page 199) and that are currently assigned the same audio level, will turn the color associated with the

current display (see "Calibrating the Audio Monitoring Color" on page 104), showing that someone is listening at this specific display:

If multiple users are listening to the same audio source at the same time, then the indicator will show one color only: (1) the color associated with a display in the same room (2) the color associated with the display at the monitoring output that was enabled last in the room.

Controlling the Audio Monitoring Volume from the RCP2

- Adjust the audio volume for your assigned monitoring output by using the up and down volume buttons on the RCP2.
- Mute the audio by pressing the Mute button on the RCP2.
- Attenuate the volume by 20 dB by pressing the -20 dB button on the RCP2.

Triggering Audio Monitoring by Using an Action

> **Note:** All audio and video monitors are configured by default, with a *Monitor audio* action triggered by a single click.

To trigger audio monitoring, by using an action:

- Create a *Monitor audio* action, for the audio source you wish to monitor. This action can be assigned to a monitor on the monitor wall, or it can be a background action. See "Creating Actions" on page 237 for details.

Setting a Display Monitor's Output Resolution

It is possible to configure a display's output resolution from the monitor wall. This is useful if you don't have access to another computer. If there is no output on a display, you can reset the output resolution to 1280 × 1024 @ 60 Hz, by using a keyboard shortcut: hold down the Ctrl and Alt keys, and then press R.

- In the case of a **Kaleido-X**, connect the keyboard to a USB port on the output card associated with the display. If two displays are connected to this output card, then the resolution is applied to both. Alternatively, use a keyboard connected to the Kaleido-RCP2.

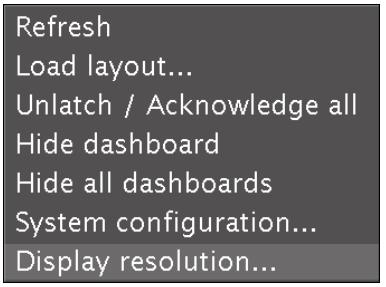
- In the case of a **Kaleido-X16**, connect the keyboard to one of the USB ports on the multi-viewer. If two displays are connected to the multi-viewer, then the resolution is applied to both. Alternatively, use a keyboard connected to the Kaleido-RCP2 (if available).
- In the case of a **KMV-3901/3911**, you can only connect a keyboard to the Kaleido-RCP2 (if available). If two displays are connected to the multi-viewer, then the resolution is applied to both.

Note: If the keyboard is connected to a Kaleido-RCP2, the **Keyboard** attribute for the current RCP user must have been set to "US" in XEdit, otherwise the shortcut may not work (i.e. it could be parsed and converted to a special character, depending on the selected locale). In the case of a Kaleido-X, the shortcut will reset the resolution on the active display (the one where the mouse pointer is located) and on the other display connected to the same output card, if any.

Enabling EDID Auto-Detection from the Monitor Wall

To enable EDID auto-detect for a display:

1. Right-click the monitor wall background, and then click **Display Resolution** on the shortcut menu:



2. Select the **Use detected monitor resolution** check box:

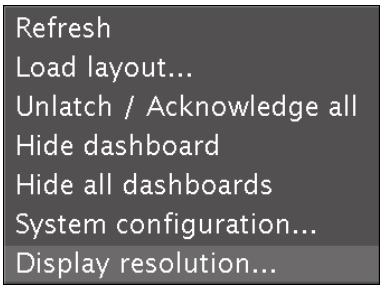
3. Click **OK**.

Note: The monitor EDID auto-detect feature is enabled by default in order to facilitate the initial setup of a Kaleido-X system. To avoid problems, Miranda recommends that you disable the auto-detect feature once the initial setup is completed. If you later wish to replace one of the displays, re-enable the auto-detect feature beforehand (remember to disable it once the new display is up and running).

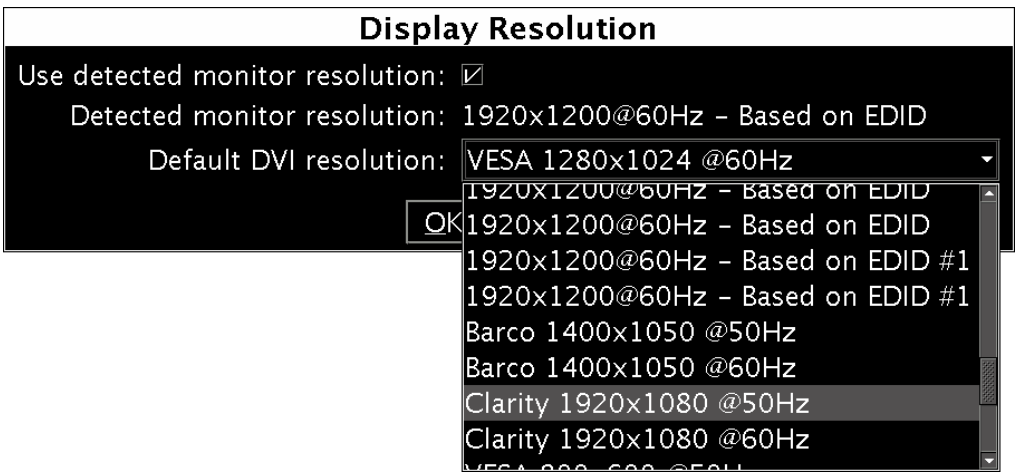
Specifying Output Resolution from the Monitor Wall

To specify output resolution from the Monitor Wall:

1. Right click on the Monitor Wall background, and choose **Display Resolution** from the menu that appears:



2. Choose a value from the **Default DVI resolution** menu:


Display Resolution
Use detected monitor resolution:
Detected monitor resolution: 1920x1200@60Hz - Based on EDID
Default DVI resolution: VESA 1280x1024 @60Hz
OK
1920x1200@60Hz - Based on EDID
1920x1200@60Hz - Based on EDID #1
1920x1200@60Hz - Based on EDID #1
Barco 1400x1050 @50Hz
Barco 1400x1050 @60Hz
Clarity 1920x1080 @50Hz
Clarity 1920x1080 @60Hz

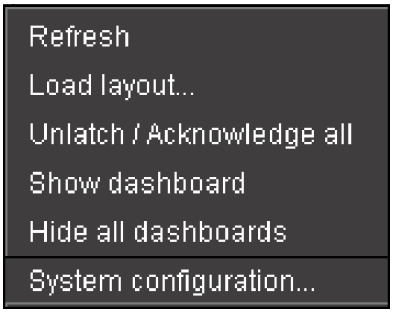
3. Click **OK**.

Changing the IP Address of a Multi-Viewer from the Monitor Wall

The IP address, system name, and other parameters can be set via a control panel on the monitor wall.

To change the IP address of the multi-viewer from the monitor wall:

1. Right-click anywhere on the monitor wall, point to **Monitor Wall**, and then click **System configuration**.



The **System Configuration** window appears.

2. Click the **Ethernet** tab.
3. Type the required Frame IP address, network mask, and gateway address in the appropriate boxes.
4. Type the required addresses for all outputs.
5. Click **OK**.
6. When prompted to restart the system to apply your changes, click **Yes**.

   The new configuration will become effective once the system restart has completed.

4 Managing Kaleido-X Systems

This section explains what constitutes a Kaleido-X system, and the related workflow.

Key Concepts

Term	Description
System	A *Kaleido-X system* represents a grouping of equipment, including one or more multi-viewers that have the *Kaleido-X Software*, and a number of peripheral devices such as routers, production switchers, UMD controllers, or automation systems. In XEdit, you work against one system at a time. Each system is stored as a separate database.
Kaleido-X	The Kaleido-X multi-viewer is a multi-room, multi-image processor and router in a single, expandable frame. The compact Kaleido-X (4RU) multi-viewer supports 32 inputs and 4 multi-image outputs. The Kaleido-X (7RU) multi-viewer can display 96 inputs over up to 8 displays of any resolution and orientation. By using a mid-plane expansion module, two Kaleido-X (7RU) frames can be connected to display up to 192 video inputs over up to 12 displays. The Kaleido-X (7RU) built-in routing capability offers switching of 96 unprocessed inputs to 48 HD/SD outputs for feeding monitors, test equipment, master control or production switchers, ISO recorders, or other multi-image processors.

Term	Description
Kaleido-X16	The Kaleido-X16 is a compact, ultra-quiet multi-viewer in a 1RU frame, with 16 inputs and two outputs. It provides a subset of the features of the Kaleido-X 4RU and 7RU models. There are two types of Kaleido-X16: Kaleido-X16-S (single head) and Kaleido-X16-D (dual head).
KMV-3901/3911	The KMV-3901, the first member of the Kaleido-Modular series, is a multi-viewer on a single Densité card, with eight inputs and two outputs. Designed to address production-type applications, it supports a subset of the features offered by the other Kaleido-X series multi-viewer models: • Processing: Video scaling, Video cropping, 3Gbps (Level A) support, KXI-DVI-Bridge support. • Probing: Display of audio levels (up to 16 audio signals per head), time codes (based on URS signal from a REF-1801 Densité card, or on embedded reference signal), video format and audio format. • GPIO interface: Support for 8 GPI inputs and 2 GPI outputs. In addition to the features listed above, the new KMV-3911 multi-viewer supports up to two HD-SDI monitoring outputs.
XEdit	XEdit is the Kaleido-X layout editor, a software intended to be run on a remote computer. Its purpose is to define your Kaleido-X system components, including external devices, create rooms, logical sources, layouts, and RCP user definitions, and perform all the configurations required for successful operation of the multi-viewer. XEdit has two modes of operation: you can work *offline* in a local workspace and then apply your changes by exporting them to the multi-viewer, or you can connect to a multi-viewer and work in online mode, directly on the system. Changes made in online mode take effect immediately on the monitor wall.
Database	Layouts and related configurations for your Kaleido-X system are created in XEdit. All this information is stored in a database. When you work in offline mode, your load the appropriate database in a local workspace on the PC where XEdit is used. XEdit can export such a database to a multi-viewer, or import the current layouts and configurations from a multi-viewer into the local workspace on your PC. For changes you make in offline mode to take effect on the monitor wall, you must export the database to a multi-viewer. Conversely, any configuration change you make in online mode must be imported from the multi-viewer into your local workspace if you wish to be able to make further changes in offline mode.
Expansion system	An expansion system includes two *Kaleido-X (7RU)* frames, working together as a single unit.

Term	Description
Cluster	A cluster refers to multiple multi-viewers, configured so that they can be operated as a single system from a room comprising up to 48 displays fed by the different multi-viewers' outputs. The complete cluster system can include up to 128 displays. See "Creating a Cluster" on page 79.
Cascade	A cascade refers to up to three *KMV-3901/3911* multi-viewers, configured so that they can be operated as a single system from a room. The cascade makes it possible to monitor up to 24 video inputs, on a single monitor wall display. Refer to the KMV-3901/3911 Cascade Step-by-Step Configuration guide, for more information.
Logical source	A *logical source* (called a *channel,* in earlier versions of the documentation) refers to a group of physical audio, video, or metadata sources, and text attributes. A logical source can be used as a whole, and assigned to a virtual monitor. See "Creating Logical Sources" on page 135, for details.
Cards	Cards are added to, and removed from a Kaleido-X (7RU) or Kaleido-X (4RU) multi-viewer. There are different, specialized types of cards: input cards, output cards, a GPI/genlock card, expansion cards and internal router cards. Refer to the appropriate *Hardware Description & Installation Manual* available on the DVD that shipped with your system, for more information.
Virtual card slots	The Kaleido-X16 introduced the concept of *virtual card slots* that represent a set of hardware features directly on the multi-viewer's main board. In XEdit, the Kaleido-X16 virtual card slots contain representations of GPI/genlock, input, output, and internal router cards that are equivalent to their physical counterparts on the Kaleido-X (4RU) and Kaleido-X (7RU) models. Likewise, the KMV-3901/3911 multi-viewers have virtual card slots with representations of GPI/genlock, input, and output cards. There are, however, some differences in the Kaleido-X16 and KMV-3901/3911 multi-viewer models are presented in XEdit, compared to the other Kaleido-X models: • Cards in virtual slots are always present by default, and cannot be removed in XEdit. • There are no status icons next to a virtual card slot (e.g. inserted or empty card slot icon).

Term	Description
	In XAdmin the virtual slot/card concept is represented as follows: • Cards in virtual slots have no name. • There is no reset button associated with each card. Instead, there is a single multi-viewer reset button that sends a reboot command to the multi-viewer. • Cards in virtual slots have no serial number. Instead, there is one serial number for the multi-viewer. • Cards in virtual slots do not have individual IP addresses. There is only one IP address, which is associated with the multi-viewer.
Calibration	Calibration refers to the configuration of different card attributes. For example, an output card's *Brightness* and *Contrast* attributes can be calibrated, or an input card's *Silence threshold* attribute. See "Calibrating the Kaleido-X" on page 93, for details.
Peripheral devices	A peripheral device is an external piece of equipment, such as a router or production switcher, that can be connected to the multi-viewer.

Detailed Directions

Creating and maintaining a Kaleido-X system involves a number of file management tasks, including backup and restore operations. The XEdit software is used to perform these tasks. Some tasks are done online, others in offline mode. Most are available in both modes.

A local database is used as a workspace to save layouts and related configuration data temporarily while you are building your Kaleido-X system in offline mode. If you need to build more than one system, you can keep working with the same database, and use the backup tool to save the data for each system separately. To further work on a specific system you would then use the retrieve backup tool. See "Managing Multiple Databases Efficiently" on page 90 for an overview of the recommended workflow.

Opening the XEdit Software

When using XEdit offline, you work inside a workspace located on your client PC. When you first open XEdit, a window will prompt you for the location for this workspace. It is recommended to consider this workspace as a sandbox into which you will always first import the database you wish to work on during the current session, and from which you will export the database at the end of the session.

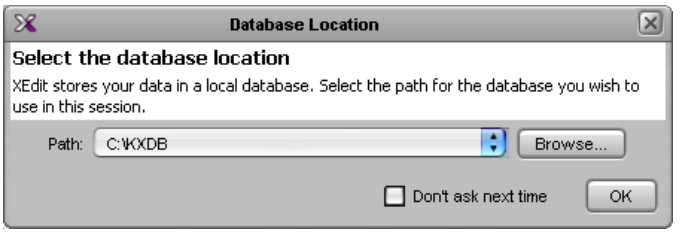
To open XEdit:

1. Double-click the **XEdit** icon on your desktop:

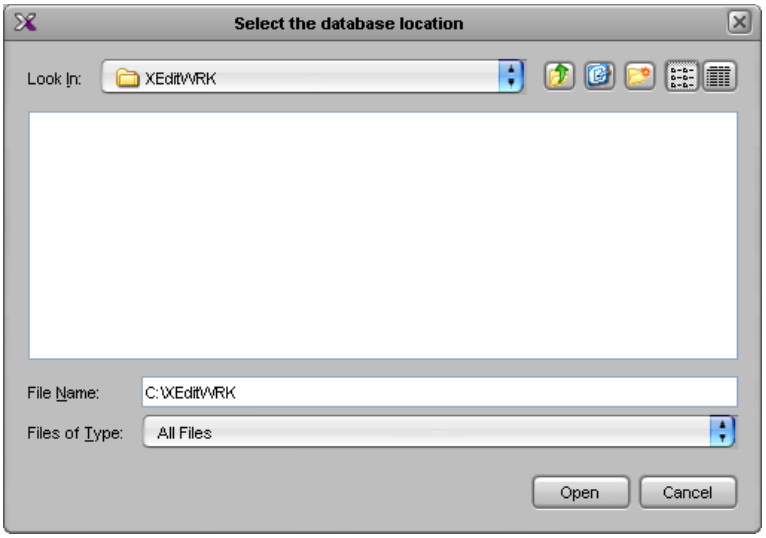
.

   A startup screen appears, followed by the **Database Location** window.

2. When prompted to specify the database location, click **Browse**.


Database Location
Select the database location
XEdit stores your data in a local database. Select the path for the database you wish to use in this session.
Path:
C:\KXDB
Browse...
Don't ask next time
OK

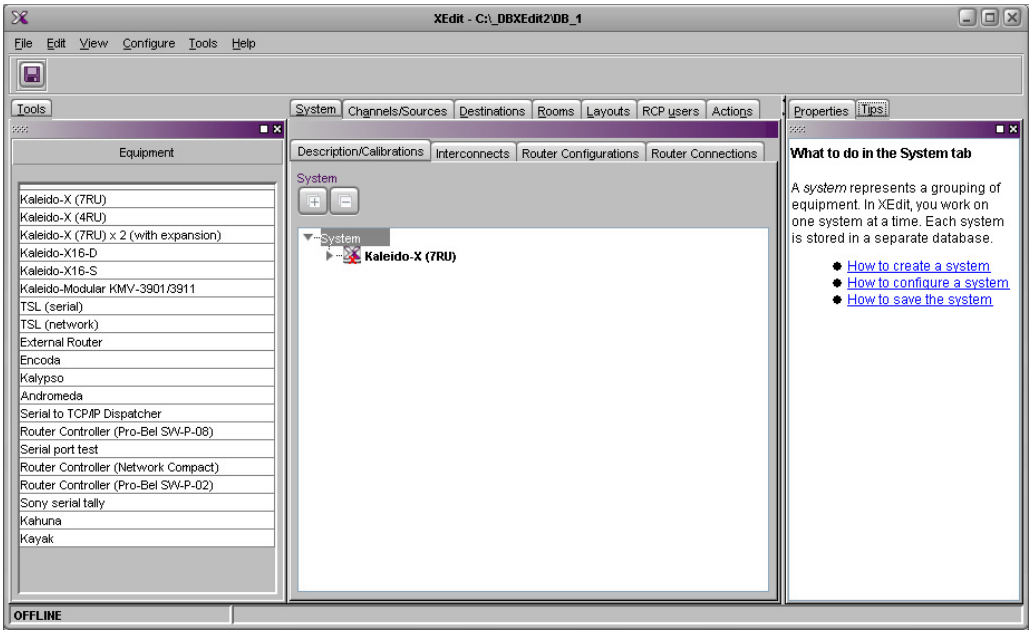
3. From the window that opens, locate an appropriate directory for your workspace, and then click **Open** to close the **Select the database location** window.



If it is not the first time you open XEdit, and you are satisfied with the location of your local workspace, then select the **Don't ask next time** check box, to avoid being prompted every time you open XEdit.

4. Click **OK** to close the **Database Location** window.

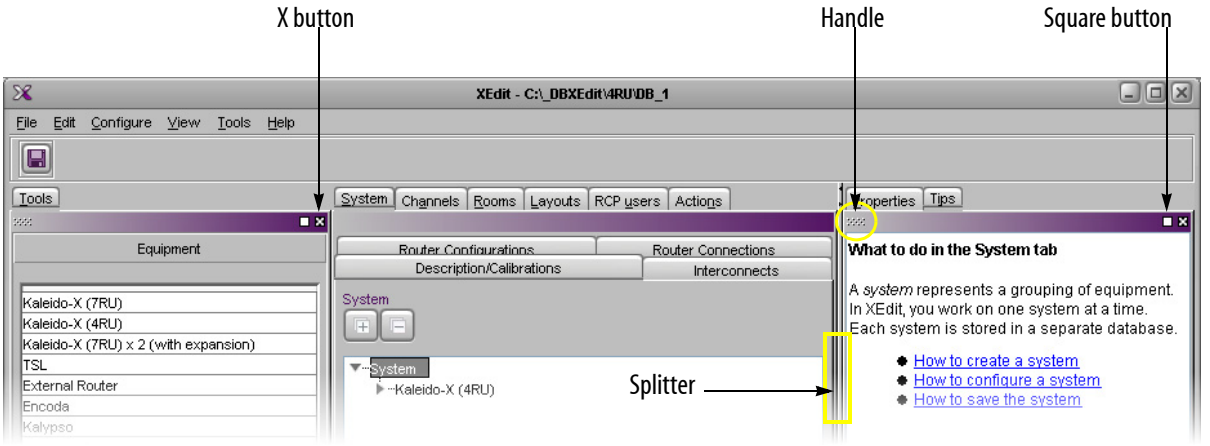
   The **XEdit** main window appears. This may take a few seconds.



When first opening XEdit in offline mode, the database contains the default configuration for a Kaleido-X (7RU) system, including a fully-populated frame (all cards present) and a set of predefined logical sources.

To customize the layout of the XEdit application window:

- Resize the window, and its three panes, by dragging the window's borders, corners, and pane splitters.
- Move the **Tips**, **Tools**, and **Properties** tabs between the left and right panes, and reorder them, by clicking their handle and dragging to the desired location.
- Close the **Tips**, **Tools**, and **Properties** tabs by clicking their X button.
- Undock the **Tips**, **Tools**, and **Properties** tabs from the main window, by clicking their square button.



- Dock the **Tips**, **Tools**, and **Properties** tabs, by clicking their **X** button.

To restore the default application layout:

1. Dock the **Tips**, **Tools**, and **Properties** tabs, if they are undocked, by clicking their **X** button.
2. On the **View** menu, point to **Panes and tabs**, and then click **Restore default window settings**.

To close XEdit:

- On the **File** menu, click **Exit**. Alternatively, click the × button in the upper right corner of the main application window.

Using XEdit Online

When using XEdit in *online* mode, any changes made are applied and stored directly on the multi-viewer. When using XEdit in *offline* mode, all changes are stored locally on the user's PC, and the database must be exported to the multi-viewer for the changes to take effect.

When connected to a multi-viewer, any change you make to your system's configuration takes effect immediately *on the multi-viewer* itself; your local database is not involved. The online mode is not limited to basic system configuration; changes can also be made to existing logical sources, rooms, layouts, RCP users, etc.

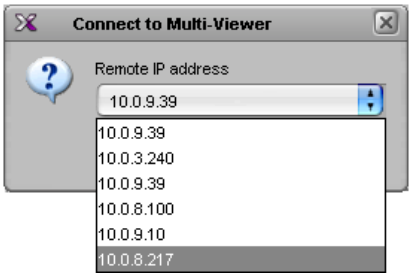
Note: Cluster systems can only be configured in online mode.

Connecting to a Multi-Viewer

To connect to a multi-viewer:

1. On the **Configure** menu, click **Connect**.

   The **Connect to Multi-Viewer** window appears.

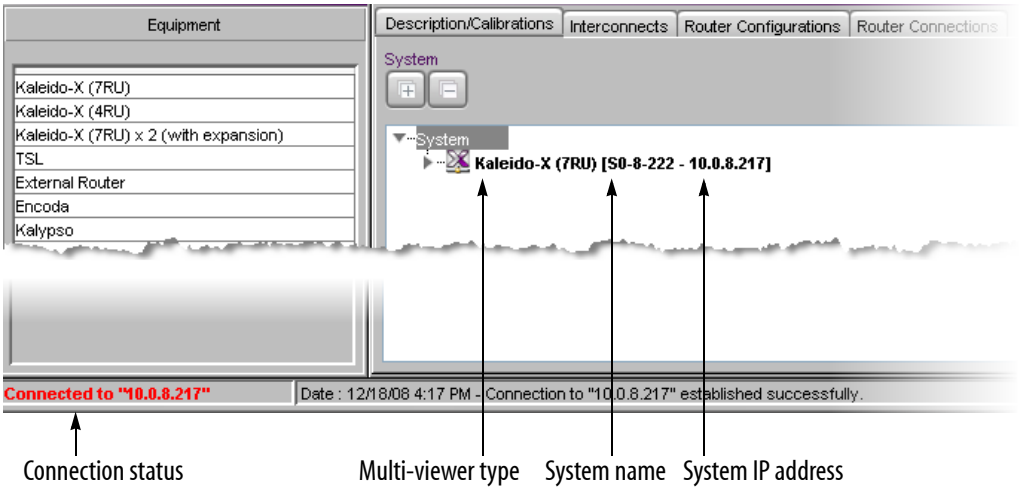


   IP addresses for all the multi-viewers that are on the same subnet as your PC are included in the list.

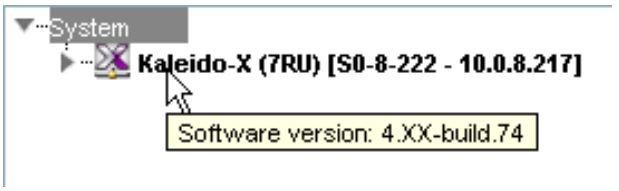
2. If your PC and the multi-viewer are on the same subnet, then you can select the IP address of the multi-viewer you wish to connect to from the list. Otherwise type the appropriate IP address in the box.

3. Click **OK**.

   The selected system's hierarchical list appears in XEdit's main pane, showing the multi-viewer type, system name and IP address, and the status bar shows the connection status.



   It is also possible to verify which version of the Kaleido-X Software is installed on this multi-viewer, by moving to pointer to the system name in the System list. A tip appears, showing this information.



Notes

- When using XEdit in online mode, some database functions, such as **Export**, **Import**, and **Retrieve backup**, are not available. Any changes made by the user are not kept locally on the user's PC, but applied directly on the multi-viewer. To retrieve the data set from the multi-viewer, either disconnect from the multi-viewer, and then use the **Import** function, or use the **Create backup** function to save a copy of the database. A database can be retrieved from a backup repository to your local workspace later. See "Managing Multiple Databases Efficiently" on page 90 for a description of the recommended workflow.
- It is not recommended to have two or more users simultaneously connected online to the same multi-viewer for editing.

Disconnecting from a Multi-Viewer

To disconnect from a multi-viewer:

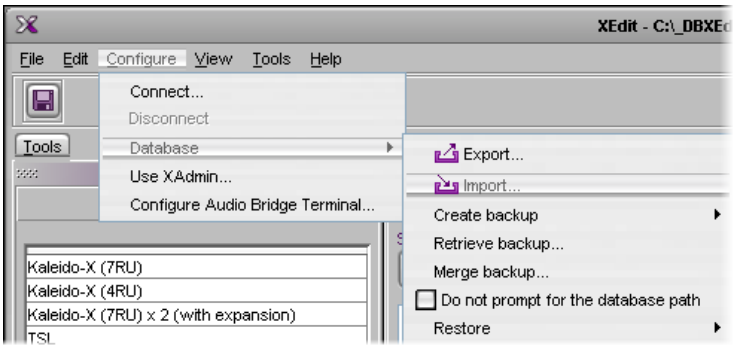
- On the **Configure** menu, click **Disconnect**.

  XEdit displays the **OFFLINE** status on the status bar.

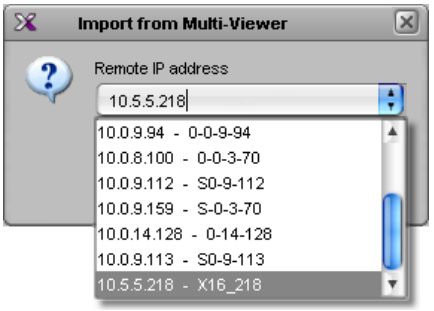
Importing a Database

To import a database:

1. On the **Configure** menu, point to **Database**, and then click **Import**.



   A window appears, prompting you for the IP address of the multi-viewer whose database you wish to import.



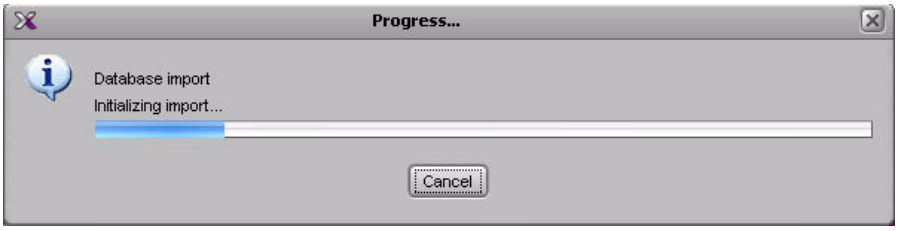
IP addresses for all the multi-viewers that are on the same subnet as your PC are included in the list.

2. If your PC and the multi-viewer are on the same subnet, then you can select the IP address of the multi-viewer from the list. Otherwise type the appropriate IP address in the box.
3. Click **OK**.

   A window appears, prompting you to confirm that you really want to import data from the multi-viewer.

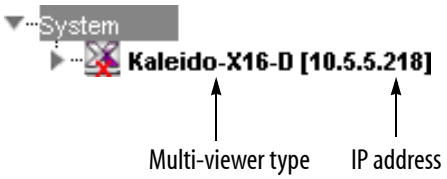
4. Click **Yes**.

   A progress window appears, followed by a message stating whether the import succeeded or not.



5. Click **OK**.

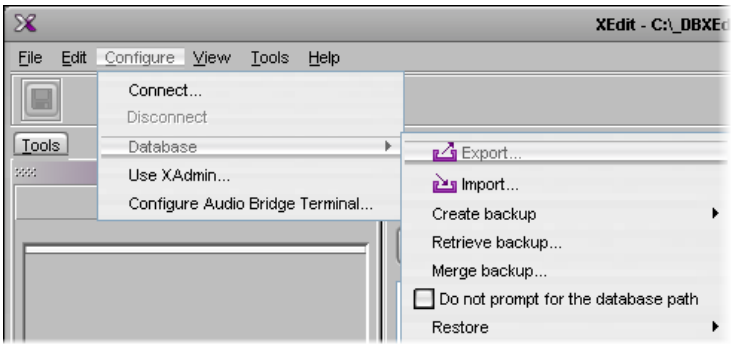
   The imported data has replaced the former content in your local workspace. The originating system's multi-viewer type and IP address now appear in the System list.



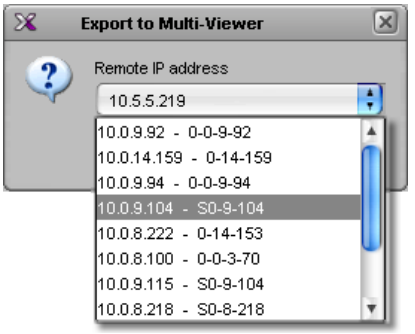
Exporting a Database

To export a database:

1. On the **Configure** menu, point to **Database**, and then click **Export**.



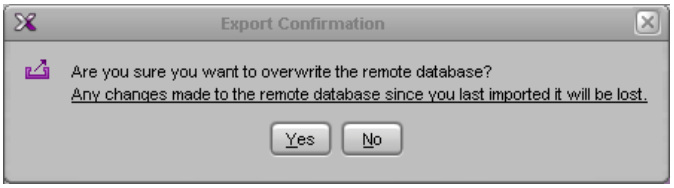
The **Export to Multi-Viewer** window appears, prompting you for the IP address of the multi-viewer to which you wish to transfer the database.



IP addresses for all the multi-viewers that are on the same subnet as your PC are included in the list.

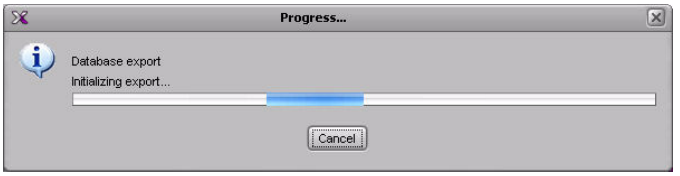
2. If your PC and the multi-viewer are on the same subnet, then you can select the IP address of the multi-viewer from the list. Otherwise type the appropriate IP address in the box.
3. Click **OK**.

   A window appears, prompting you to confirm that you really want to export data to the multi-viewer.


Export Confirmation
Are you sure you want to overwrite the remote database?
Any changes made to the remote database since you last imported it will be lost.
Yes
No

4. Click **Yes**.

   A progress window appears, followed by a message stating whether the export succeeded or not.



5. Click **OK**.

   All data on the remote system is now replaced with content from the local workspace.

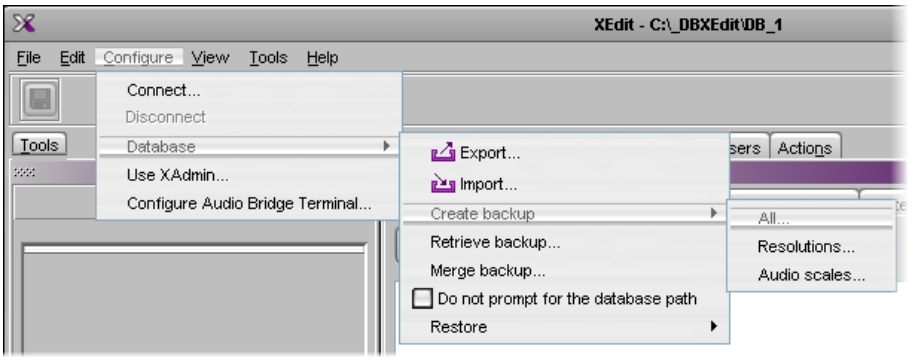
Creating a Backup

Use the **Create backup** and **Retrieve backup** functions to manage copies of your system database. This is equivalent to the usual **Save as** and **Open** functions, and is useful not only for security purposes but also on sites where more than one system must be maintained.

Backing Up the Current Database

To back up the current system database:

1. On the **Configure** menu, point to **Database**, then to **Create backup** and click **All**.



Database backup menu

The **Create Backup** window appears.

2. In **Create Backup**, select the location where you wish to save a backup copy of the current database content, and then click **Save**.

   The database is saved as a ZIP file.

Backing Up Resolutions

To back up resolutions from the current system:

1. On the **Configure** menu, point to **Database**, then to **Create backup** and click **Resolutions**.

   The **Create Backup** window appears.

2. In **Create Backup**, select the location where you wish to save a backup copy of the resolutions from the current database, and then click **Save**.

   The resolutions are saved as an XEdit collection file, with a `.xcol` extension.

Backing Up Audio Scales

To back up audio scales from the current system:

1. On the **Configure** menu, point to **Database**, then to **Create backup** and click **Audio scales**.

   The **Create Backup** window appears.

2. In **Create Backup**, select the location where you wish to save a backup copy of the audio scales from the current database, and then click **Save**.

   The audio scales are saved as an XEdit collection file, with a `.xcol` extension.

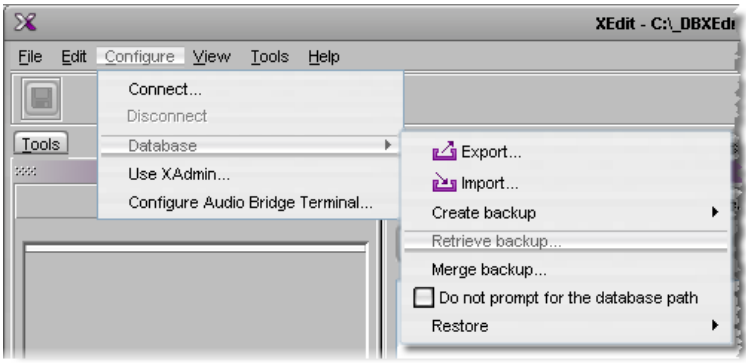
Retrieving a Backup

Retrieving a Database from a Backup

> **Note:** When XEdit retrieves a *database backup*, it replaces the content of the local workspace with data from the backup. This cannot be undone. Always create a backup of the current data before retrieving data from a different source. See "Managing Multiple Databases Efficiently" on page 90 for an overview of the recommended workflow.

To retrieve a backup database:

1. On the **Configure** menu, point to **Database**, and then click **Retrieve backup**.



The **Select Backup** window appears.

2. In **Select Backup**, navigate to the appropriate backup file (a ZIP archive, in the case of a full database backup), select it, and then click **Open**.

   A message appears prompting you to confirm your intention.

XEdit
Are you sure you want to retrieve a backup ?
The current database content will be overwritten.
It is recommended to create a backup
of the current database before retrieving another one.
Yes
No

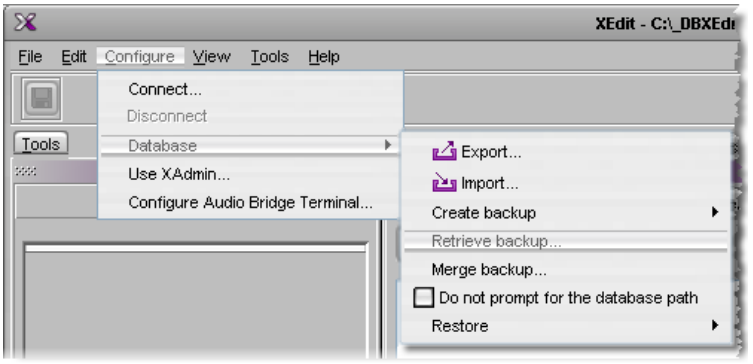
3. Click **Yes**.

   The former content of the local workspace is entirely replaced with data from the backup.

Retrieving Resolutions or Audio Scales from a Backup

To retrieve resolutions or audio scales from a backup:

1. On the **Configure** menu, point to **Database**, and then click **Retrieve backup**.



The **Select Backup** window appears.

2. In **Select Backup**, navigate to the appropriate backup file (an XEdit collection file, with a `.xcol` extension), select it, and then click **Open**.

The content of the local workspace is updated with data from the backup.

> **Note:** XEdit will *not* prompt for confirmation.

Creating a Single Multi-Viewer System

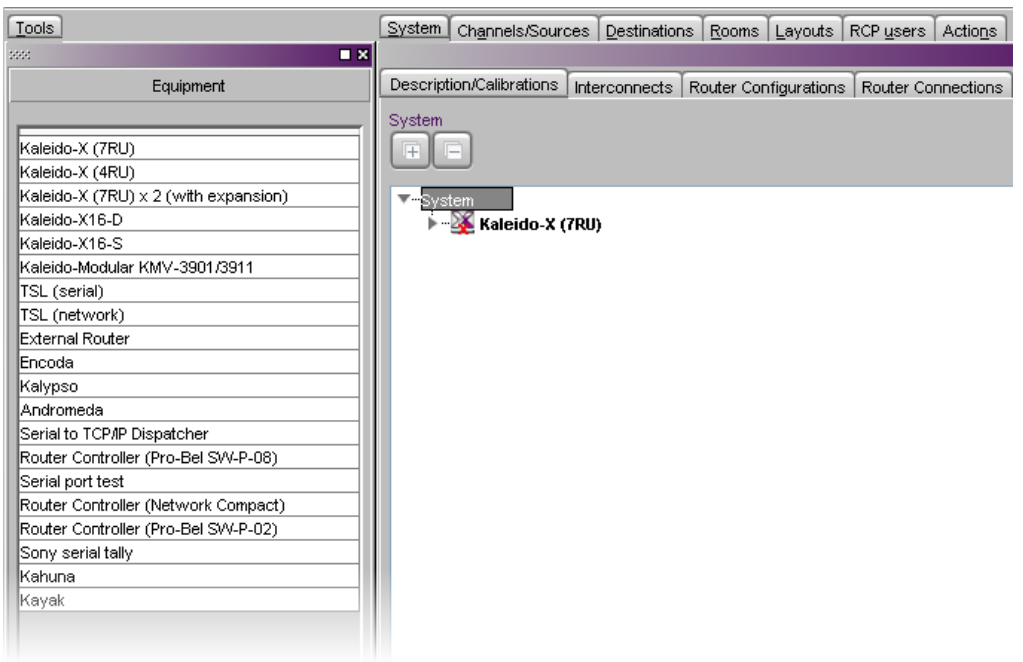
When first opening XEdit in offline mode, the database contains the default configuration for a Kaleido-X (7RU) system, including a fully-populated frame (all cards present) as a starting point. If you have a different multi-viewer type—i.e. a Kaleido-Modular, a Kaleido-X16, a Kaleido-X (4RU) or an expansion system—, then you need to replace the default multi-viewer type.

> **Note:** For the purpose of creating a system, an expansion system—Kaleido-X (7RU) × 2—is considered as a single multi-viewer. For instructions on creating a *cluster* system, see "Creating a Cluster" on page 79.

To create a system with a single multi-viewer:

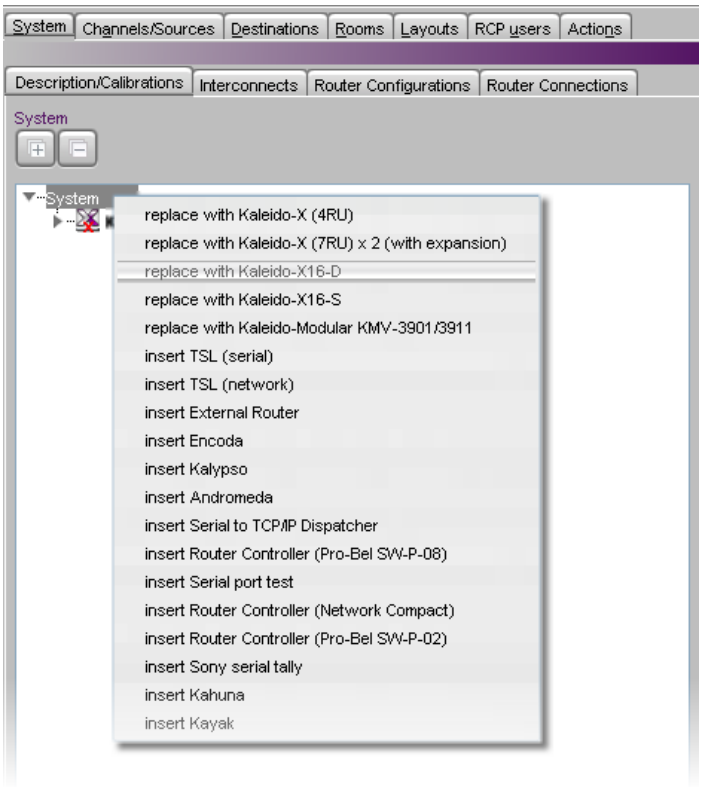
1. Launch XEdit.
2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected:



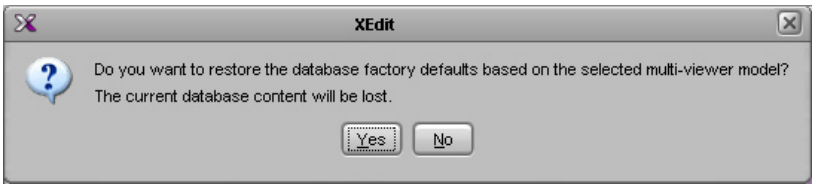
3. In the equipment library, select the appropriate multi-viewer type: **Kaleido-X (7RU)**, **Kaleido-X (4RU)**, **Kaleido-X (7RU) × 2 (with expansion)**, **Kaleido-X16-D**, **Kaleido-X16-S**, or **Kaleido Modular KMV-3901/3911**, and drag it onto the root of the System hierarchical list.

   Alternatively, right-click the list root, and then click the appropriate multi-viewer type on the shortcut menu:



> **Note:** If you deleted the initial multi-viewer entry from the System list then the menu shows "Insert..." options for each multi-viewer type; otherwise it shows "Replace with..." options for the remaining multi-viewer types.

   A message may appear, prompting you to confirm your intention:


XEdit
Do you want to restore the database factory defaults based on the selected multi-viewer model?
The current database content will be lost.
Yes
No

4. Click **Yes** to have the system populated with factory defaults for the selected multi-viewer type. See "Restoring Factory Defaults" on page 87, for details.

Alternatively, click **No**, if this system is based on an existing multi-viewer system whose room and layout configurations you wish to reuse. (For instance, you could be converting two 7RU multi-viewers to an expansion system. Refer to the "Kaleido-X (7RU) Expansion" chapter in the *Kaleido-X (7RU) Hardware Description & Installation Manual* for more information.)

> **Note:** Databases created for a KMV-3901/3911, Kaleido-X16, a Kaleido-X (4RU) or a Kaleido-X (7RU) system are not fully compatible with each other. It is important to select the proper multi-viewer type at this stage.

5. Select the relevant peripheral devices in the equipment library and drag them onto the root of the System hierarchical list in the main window. Alternatively, right-click the list root, and then click the appropriate peripheral device on the shortcut menu.

   All peripheral devices added to the system appear in the System list.

6. If you are going to control the multi-viewer, from a device using one of the supported TCP/IP router protocols (SW-P-02, SW-P-08, Network Modular, or NVISION), then configure the router level to be controlled:

   — Click the multi-viewer in the System list, and then, in the **Properties** tab, specify the logical router and level you wish to control, by selecting the appropriate values in the **Router** and **Router level** lists under **TCP/IP Router control**.

   > **Note:** As of version 5.00 of the Kaleido-X Software, the router selected by default for TCP/IP control is the *.KX Router* logical router

7. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   Changes to the system are saved.

Creating a Cluster

Clusters can only be created and configured in online mode. Creating a cluster involves the following steps:

- connect to a first multi-viewer
- add more multi-viewers
- configure new rooms that include displays fed by the different multi-viewers
- create layouts for the new rooms
- replicate RCP users from one multi-viewer to all other systems that are part of the cluster
- replicate custom display resolutions from one multi-viewer to all others

Adding Multi-Viewers to a Cluster

Notes

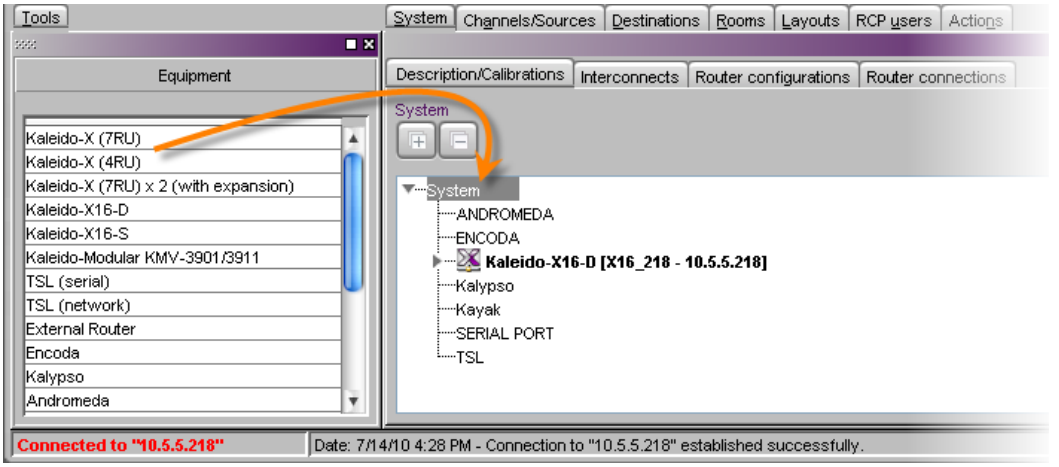
- Any multi-viewer you wish to add to a cluster must have Kaleido-X Software version 4.00 or later, and all members of a cluster must have the same Kaleido-X Software version.
- Each multi-viewer you wish to add to a cluster must have a unique name.
- If you change the system name or IP address of a cluster member while another cluster member is offline or otherwise unavailable, the cluster's integrity will be broken. If you attempt to make such a change, XEdit will alert you of the situation, prompting you to cancel the operation and try again later, when all cluster members are available. If you choose to force the change, then you will need to repair the cluster (see "Repairing a Cluster System" on page 83).
- Changing the system name or IP address of a KMV-3901/3911 multi-viewer associated with a cluster, by using the card's control panel on the Densité housing frame, or by using the KMV-3901/3911 control panel in iControl, is not supported. If this happens, then you will need to repair the cluster (see "Repairing a Cluster System" on page 83).
- A multi-viewer can only be part of one cluster system at any time. XEdit will not let you add a multi-viewer that is already included in a different cluster system.

To create a system with multiple multi-viewers:

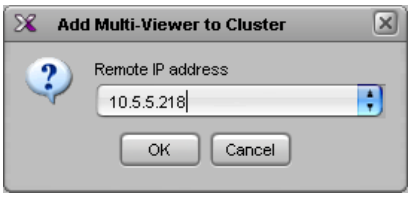
1. Open XEdit, and then click **Connect** on the **Configure** menu, to access one of the multi-viewers you wish to be part of a cluster system. See "Connecting to a Multi-Viewer" on page 70.

   You are now ready to add more multi-viewers to the system.

2. In the equipment library, select any multi-viewer type, and then drag it onto the root of the System hierarchical list.

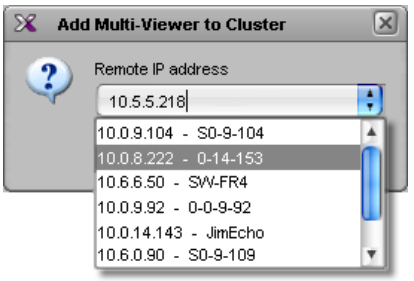


The **Add Multi-Viewer to Cluster** window appears.



IP addresses for all the multi-viewer systems that are on the same subnet as your PC are included in the list.

3. If your PC and the multi-viewer you wish to add are on the same subnet, then you can select the multi-viewer's IP address from the list. Otherwise type the appropriate IP address in the box.



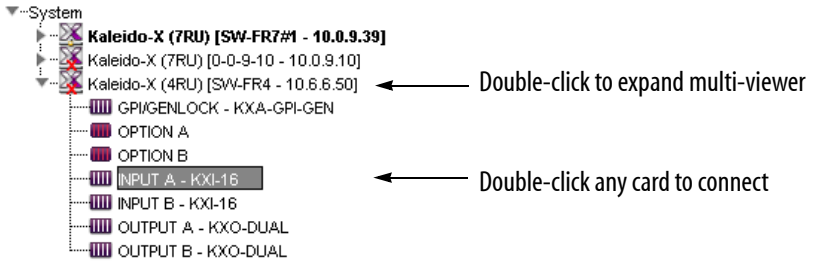
The multi-viewer is added to the System list.

> **Note:** The system type is automatically adjusted based on the actual target system.

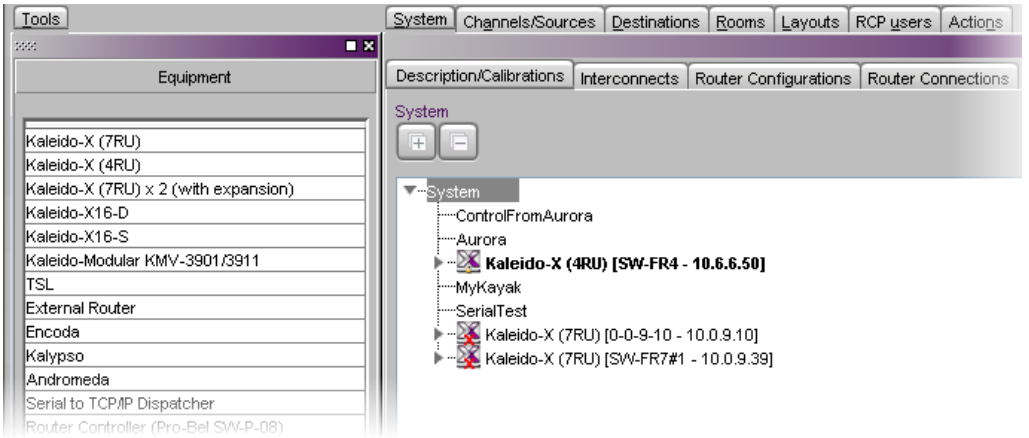
4. Repeat from step 2 until you have added all the required systems to the cluster.
5. If further system configuration is required on the individual members of the cluster, start with the current system (i.e. the one you are connected to). See "Configuring the System Representation" on page 85, for detailed instructions on adding cards. Refer to "Routers & Kaleido-X" on page 265, and "Tally Interface Devices" on page 311, for instructions on adding other routing and control devices.

> **Note:** Each member of a cluster has its own database where both common information about the cluster and information local to the individual cluster member are stored. Room and layout definitions are automatically replicated to all cluster members, whereas the configuration for devices connected to a specific system is only stored in this system's database.

6. Once you have completed the current system's specific configuration, save it, and then connect to the next cluster member you need to configure, by expanding the appropriate node and double-clicking any card.



Once the connection is established, the selected system becomes highlighted in the System list, and the message "Connected to..." appears in the status bar.



7. Repeat from step 5 until all cluster members are configured.

Note: In the hierarchical list for a cluster, an unavailable system is indicated by a dimmed icon and cannot be expanded. It can take up to 15 seconds before a multi-viewer's status icon is updated in the System list.

Creating Rooms for a Cluster System

Create rooms for the cluster system, by adding displays associated with the different multi-viewers as appropriate. See "Setting Up Rooms" on page 145, for details.

Notes

- Each room must have a unique name across the cluster system. XEdit will not let you use a name if there is already a room with this name associated with one of the multi-viewers within the cluster.
- All multi-viewers associated with the cluster system must be available. If one of the member multi-viewers becomes unavailable while you were configuring a room for the cluster system, then XEdit will not let you save the room. If you wish to save the room anyway, first remove any unavailable system from the cluster.

Creating Layouts for a Cluster System

It is possible to create a partial layout for a cluster system in offline mode, and then export it to the appropriate multi-viewer for further online configuration. When configuring a layout for a room that is associated with a cluster system, you only work on one part at a time: the part that is associated with the current multi-viewer's output heads. See "Creating Layouts" on page 171 for detailed instructions.

Note: Each layout must have a unique name across the cluster system. XEdit will not let you export a layout to a cluster system if there is already a layout with this name associated with one of the multi-viewers within the cluster. As a workaround, you could make a copy of one of the conflicting layouts under a different name, and then delete the original before proceeding with the export (see "Copying layouts" on page 181).

Replicating RCP Users Across a Cluster System

Currently, RCP Users are not automatically propagated to all multi-viewers. Before a user can log on to a room associated with a cluster system, the corresponding RCP user configuration must be manually replicated on all member multi-viewers across the cluster.

Replicating Custom Resolutions Across a Cluster System

If a room associated with a cluster system includes display screens for which you configured custom resolutions (see "Changing Room Display Resolutions" on page 160), then these resolutions must be added on every multi-viewer within the cluster.

TIP: Make a backup copy of the resolutions from the system with the custom settings, and then apply this resolution backup to the other associated multi-viewers. To do so:

1. Use the create backup feature (see "Backing Up Resolutions" on page 75).
2. While working offline, import the database from one of the target multi-viewers to your local workspace, and then use the retrieve backup feature to obtain the custom resolutions ("Retrieving Resolutions or Audio Scales from a Backup" on page 76).
3. Export the updated database from your local workspace to the target multi-viewer.
4. Repeat until all multi-viewers have been updated with the complete set of resolutions.

Repairing a Cluster System

Note: In the procedure below, *System A* refers to the system whose name or IP address was changed while another cluster member, referred to as *System B*, was unavailable.

To repair the cluster configuration:

1. In XEdit, connect to *System B,* the multi-viewer that was unavailable when the change was made, once it is available again.

2. In the **Description/Calibrations** tab, remove *System A* from the cluster, and then add it back to the cluster.
3. If other cluster members were unavailable when the change was made (e.g. if *System A* is a KMV-3901/3911 whose name or IP address was changed from the Densité frame's control panel, or from the KMV-3901/3911 control panel in iControl, then repeat the previous steps for each.

   If only the IP address was changed then no further action is required. Otherwise, if the system name was changed, then proceed as follows.
4. Connect to *System A*.
5. Change something in every room (e.g. move a display and then bring it back to its initial position) to enable the **Save** button.
6. Save the room.

   This will replicate the proper room configuration to the other members of the cluster. (At the same time, the layouts will also be updated on all multi-viewers in the cluster.)

Configuring the System Representation

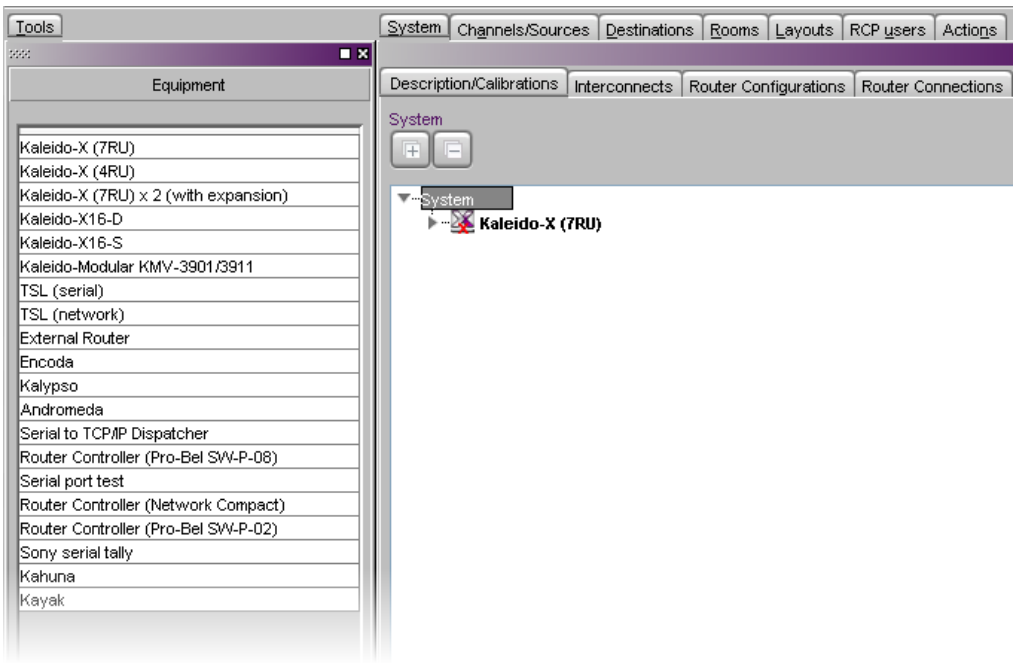
In the case of Kaleido-X (4RU), Kaleido-X (7RU), and expansion systems, configuring your system's representation in XEdit includes adding or removing cards until the representation matches the hardware configuration of your actual multi-viewer system.

> **Note:** This topic applies to the Kaleido-X (4RU), Kaleido-X (7RU), and expansion systems only. The Kaleido-X16 and KMV-3901/3911 multi-viewer models have *virtual card slots* that represent a set of hardware features integrated within their main board. In XEdit, these virtual card slots are, for the most part, equivalent to their physical counterparts on the Kaleido-X models. See page 65, for details.

To configure a system:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.



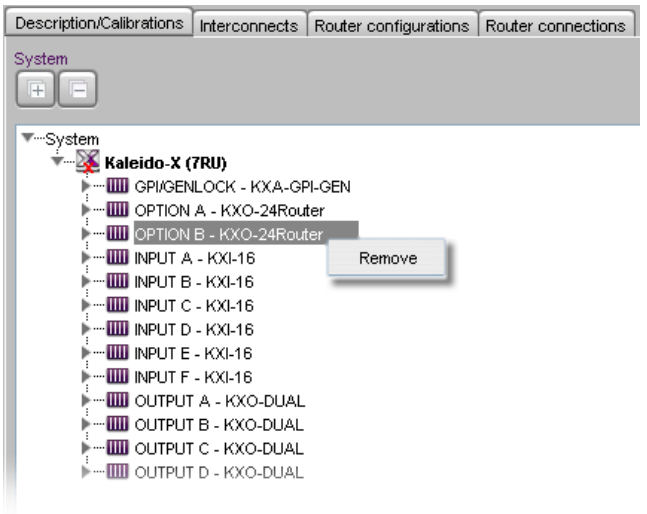
2. Expand the **System** root, and the multi-viewer.

> **Note:** In the case of an expansion system, then you need to first expand the dual frame element, under which both frames A and B are listed. You can then configure each of the two frames as described below.

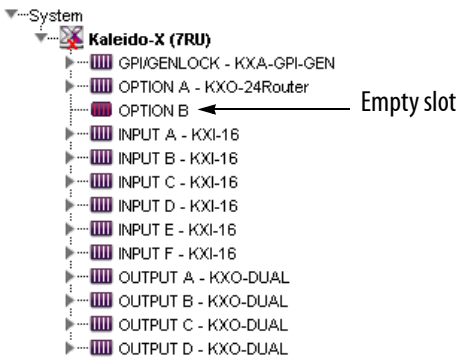
The card slots appear in the hierarchical list. If you already loaded the factory defaults for the multi-viewer type, then some slots are already populated with a card.

3. Add or remove cards until the system's card slots are populated with cards that match the hardware configuration of your multi-viewer.

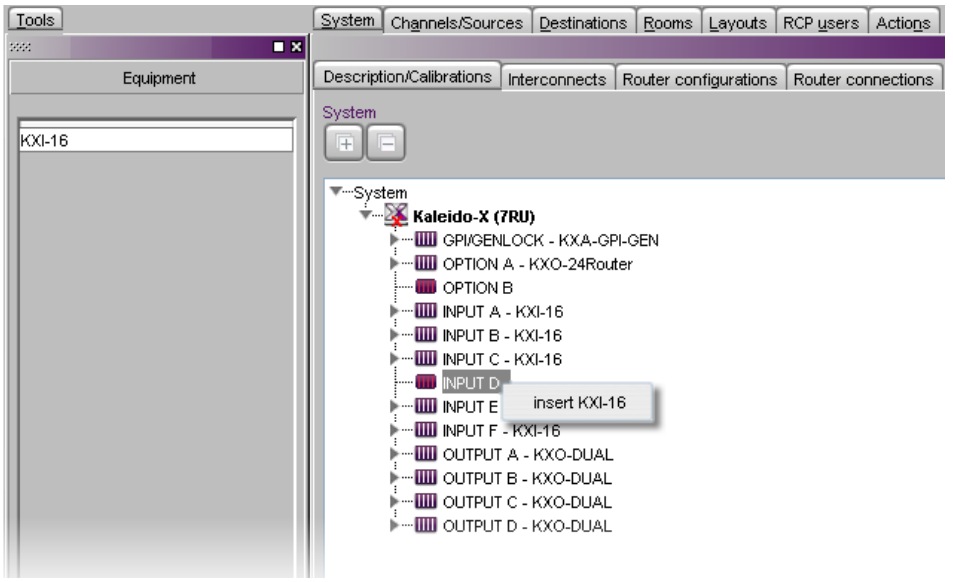
   — For each populated slot that should be empty, right-click the slot in the System list, and then click **Remove** on the shortcut menu. Alternatively click the populated card slot, and then press Delete on your keyboard.



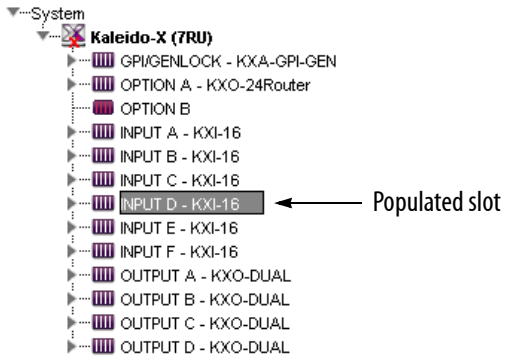
   The slot is now empty and the card type does not appear any more:



   — For each empty slot that should be populated with a card, right-click the slot in the System list, and then click **Insert [card type]** on the shortcut menu. Alternatively drag the card from the equipment library onto the empty card slot.



The slot name is now appended with the card type:



4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   All card assignments are saved.

Restoring Factory Defaults

A number of predefined rooms and layouts are available on the multi-viewer when you first install the system. Similarly, when you first set up a system in XEdit, it has a number of pre-populated cards, and logical sources, as well as one predefined RCP2 user ("Admin"). However, the default XEdit database does not include rooms or layouts.

If you wish to use default rooms and layouts as a starting point for building your system, you can either import the default database from the multi-viewer, or use the **Retrieve backup** function to load the default database from the DVD shipped with the system.

In some situations you may wish to repurpose an existing XEdit database that was designed for a specific multi-viewer and use it with a different multi-viewer model. After the database is converted, it may still

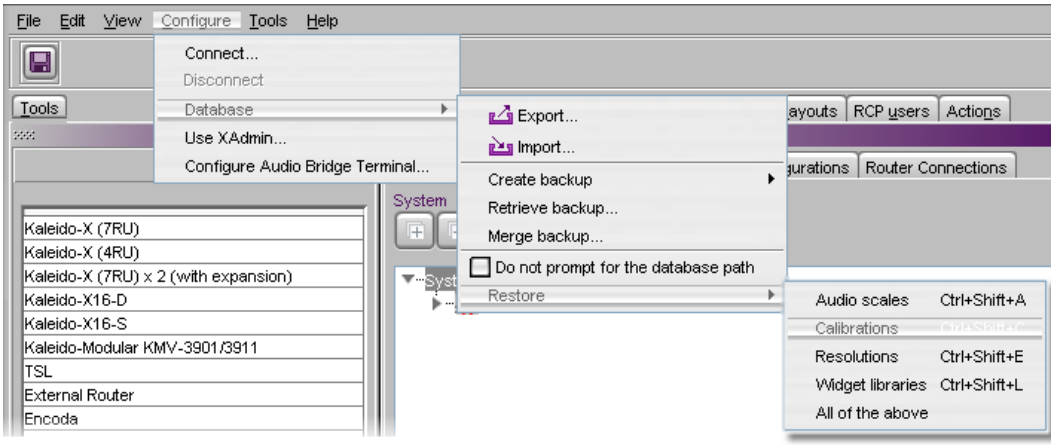
include calibrations that were only relevant to the original multi-viewer model. This is not desirable if the new system has limited memory compared to the original one. In such a case, restoring the factory-default calibrations and then calibrating your new system as required is faster than recreating rooms and layouts.

It is also possible to reset resolutions, audio scales or widget libraries to their factory default definitions.

> **Note:** If you already have custom resolutions or audio scales that you may wish to reuse, make sure you have a back up before proceeding. See "Backing Up Resolutions" on page 75 and "Backing Up Audio Scales" on page 75, for details. Custom monitors are not affected by this operation since they can only be added to custom widget libraries, and these are stored independently from the XEdit workspace.

To restore the factory-default audio scales, calibrations, resolutions, or widget libraries:

- On the **Configure** menu, point to **Database**, then to **Restore**, and then click **Calibrations**, **Resolutions**, **Audio scales**, **Widget libraries**, or **All of the above**.



The selected elements are reset to their factory-default definitions.

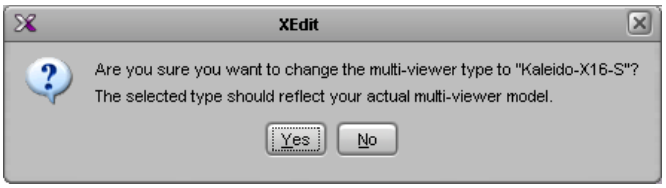
Restoring the XEdit Factory Defaults for a Selected Multi-Viewer Type

> **Note:** If you already have rooms or layouts that you wish to keep, make sure to back up the XEdit database before restoring the factory defaults. The XEdit factory defaults do not include any rooms or layouts.

To restore the XEdit factory defaults for a multi-viewer:

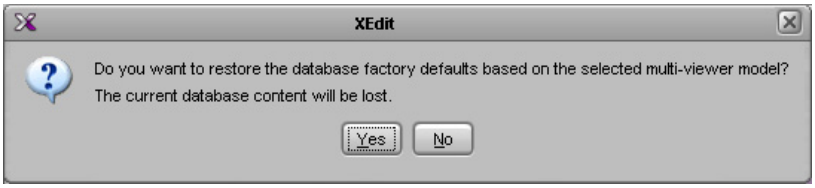
1. In the equipment library, select the appropriate multi-viewer type—**Kaleido-Modular KMV-3901/3911**, **Kaleido-X16-S**, **Kaleido-X16-D**, **Kaleido-X (4RU)**, **Kaleido-X (7RU)**, or **Kaleido-X (7RU) × 2 (with expansion)**—, and drag it onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click the system of choice on the shortcut menu.

   A message appears, prompting you to confirm your intention.


XEdit
Are you sure you want to change the multi-viewer type to "Kaleido-X16-S"?
The selected type should reflect your actual multi-viewer model.
Yes
No

2. Click **Yes**.

   XEdit then prompts you to confirm that you want to restore the factory defaults for the multi-viewer type you chose.


XEdit
Do you want to restore the database factory defaults based on the selected multi-viewer model?
The current database content will be lost.
Yes
No

3. Click **Yes**.

   The selected multi-viewer type appears in the System hierarchical list.

4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

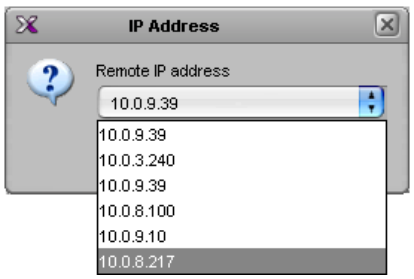
Restoring Factory Defaults From a Specific Multi-Viewer

> **Note:** See "Importing a Database" on page 71, for details.

To restore factory defaults from a multi-viewer:

1. On the **Configure** menu, point to **Database**, and then click **Import**.

   A window appears, prompting you for the IP address of the multi-viewer whose factory-default database you wish to import.



   IP addresses for all the multi-viewers that are on the same subnet as your PC are included in the list.

2. If your PC and the multi-viewer are on the same subnet, then you can select the IP address of the multi-viewer from the list. Otherwise type the appropriate IP address in the box.

A window appears, prompting you to confirm that you really want to import data from the multi-viewer.

3. Click **Yes**.

   A progress window appears, followed by a message stating whether the import succeeded or not.

4. Click **OK**.

Restoring Factory Defaults From the Kaleido-X DVD

> **Note:** See "Retrieving a Backup" on page 75, for details.

To restore factory defaults from the Kaleido-X DVD:

1. On the **Configure** menu, point to **Database**, and then click **Retrieve backup**.

   The **Retrieve backup** window appears.

2. In **Retrieve backup**, navigate to the Kaleido-X DVD, locate the appropriate default database for your multi-viewer type—for instance, `FR7_factory_default_DB.zip`, if you have a Kaleido-X (7RU)—, select it, and then click **Open**.

   A message appears prompting you to confirm your intention.

3. Click **Yes**.

Factory Defaults by Multi-Viewer Model

Model	Logical Sources	Rooms	Layouts	RCP2 Users
KMV-3901/3911	8	1	30	1 (Admin)
KMV-3901/3911-8x1	8	1	22	1 (Admin)
Kaleido-X16-S	16	1	20	1 (Admin)
Kaleido-X16-D	16	1	20	1 (Admin)
Kaleido-X (4RU)	32	2	4	1 (Admin)
Kaleido-X (7RU)	96	4	24	1 (Admin)
Kaleido-X (7RU) × 2	192	6	36	1 (Admin)

Managing Multiple Databases Efficiently

To avoid mistakes in managing databases, especially when multiple multi-viewers are involved, it is recommended to follow the rules below:

- Back up the database for each system to a central repository, separate from the local workspace you use when working in XEdit offline.
- When using XEdit, limit yourself to a single workspace. When working online, the local workspace is not used. When working offline, first either import the database from the appropriate multi-viewer into your XEdit workspace, or retrieve the latest backup for the system you wish to work on.
- When your work session in XEdit is complete, always create a new backup of the database, regardless of whether you were working online or offline.

The next sections describe three typical situations, summarized below:

Online

1. Work in XEdit.
2. Backup database from multi-viewer to central repository.

Offline

1. Import database from multi-viewer into local workspace.
2. Work in XEdit.
3. Backup database from local workspace to central repository.
4. Export database from local workspace to multi-viewer.

System restore from backup (offline)

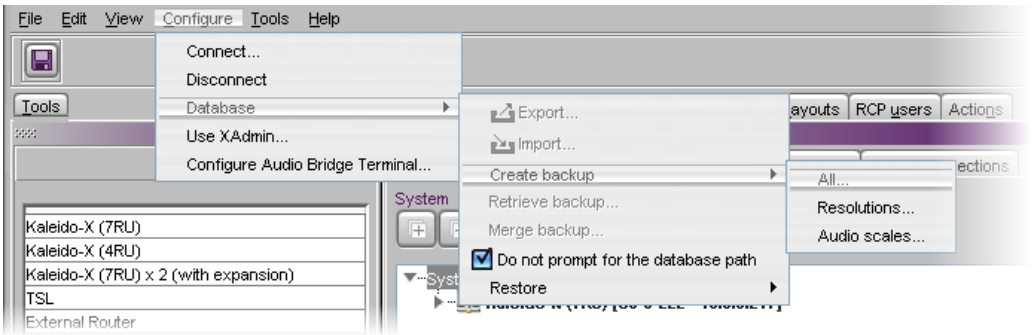
1. Retrieve backup from central repository into local workspace.
2. Work in XEdit, if needed...
   ...and then backup database from local workspace to central repository.
3. Export database from local workspace to multi-viewer.

Working Online

If you are connected to a multi-viewer, and working online in XEdit, you are actually editing the database that is located inside the multi-viewer's file system. There is one database per multi-viewer. An expansion system, comprising two Kaleido-X (7RU) frames, is also managed through a single database. A cluster system includes one database for each multi-viewer in the cluster. When you have completed your changes, create a backup of the current database and store it in a secure location on your PC. In the case of a cluster or cascade system, make a separate backup from each member.

To back up the current Kaleido-X system:

1. On the **Configure** menu, point to **Database**, to **Create backup**, and then click **All**.



2. Browse to the secure location on your PC where you store all your database backups (e.g. `MirandaDatabaseBackups`), and type a name for the new backup, preferably a name that includes the multi-viewer name and the date (e.g. `KX_A&B_08_12_02.zip`).

Working Offline

When using XEdit offline, you work inside a workspace located on your client PC. You set the location for this workspace when you first opened XEdit. It is recommended to consider this workspace as a "sandbox" into which you import the database you wish to work on during this session, and from which you export the database at the end of the session.

> **TIP:** Once you are satisfied with the location of your local workspace, on the **Configure** menu, point to **Database**, and then select the **Do not prompt for the database path** check box, to avoid being prompted every time you open XEdit.

See "Importing a Database" on page 71, for instructions on how to import the database from a specific multi-viewer into your workspace. Once the import is completed, you can work locally, in your XEdit workspace. When you have completed your changes, export the database from the workspace, back to the multi-viewer.

Applying a Backup Database to the Multi-Viewer

To retrieve a backup database, you must use XEdit in offline mode. A backup database must first be restored to your local workspace before it can be exported back to the appropriate multi-viewer.

To retrieve a backup database:

1. On the **Configure** menu, point to **Database**, and then click **Retrieve backup**.

   A window appears, prompting you to locate a backup database.

2. Navigate to your central backup storage area, select the backup database you wish to restore, and then click **Open**.

   A message appears prompting you to confirm your intention.

3. Click **Yes**.

Once the operation completes, your XEdit workspace area will contain the retrieved database. You can now work on this database in offline mode, or export it back to the multi-viewer.

5 Calibrating the Kaleido-X

A Kaleido-X system includes a number of cards or modules that process a variety of signal types. This section explains how to calibrate features related with the different signal types.

Key Concepts

IMPORTANT: **Calibration changes are applied immediately.**

Unlike other elements in a multi-viewer configuration, system calibrations do not need to be saved.

- When using XEdit in *online* mode, calibration changes become immediately effective.
- When using XEdit in *offline* mode, calibration changes are applied to the system representation in your local workspace.

Multi-Viewer Output Calibrations	
Brightness	The green, red, and blue brightness parameters determine the black level of the RGB output signals shown on the corresponding display. See "Calibrating the Brightness and Contrast" on page 96.
Contrast	The green, red, and blue contrast parameters determine the white level of the RGB output signals shown on the corresponding display. See "Calibrating the Brightness and Contrast" on page 96.

Color saturation	The color saturation of an RGB output signal can be adjusted so that colors in the video windows will match the graphic elements introduced by the Kaleido-X around them on the corresponding display. See "Calibrating the Color Saturation" on page 99.
DVI keying mode	Depending on your purposes, key material provided through the DVI input can be set either as a background or as a foreground for the layout shown on the monitor wall. See "Calibrating the DVI Keying Mode" on page 101.
Audio monitoring delay	The audio monitoring delay parameter can be adjusted to optimize the relative timing of the audio and video signals on the monitor wall display. See "Calibrating the Audio Monitoring Delay" on page 102.
Audio monitoring color	Audio monitors can have an indicator that changes color depending on the output display where audio monitoring of the associated audio level is taking place. The default color is a shade of blue. See "Calibrating the Audio Monitoring Color" on page 104.
Multi-Viewer Input Calibrations	
Detail enhancer	The purpose of the detail enhancer parameter is to recover sharpness that may have been lost in the de-interlacing and scaling process. See "Calibrating Detail Enhancement and Dynamic Range" on page 111.
Dynamic range	The dynamic range parameter determines the color model to be applied: either full-range RGB (0-255) or video RGB (16-235). Full-range RGB is also called *computer RGB*; video RGB is also called *studio RGB*. See "Calibrating Detail Enhancement and Dynamic Range" on page 111.
Aspect ratio	Unlike *HD* signals where aspect ratio information, when available, always follows the SMPTE 2016 standard, there are different standards for encoding aspect ratio information in *SD* signals. The AFD & WSS calibrations determine which standard will be applied by default to SD signals feeding the selected multi-viewer input. The aspect ratio of video windows on the monitor wall can then be automatically adjusted, based on the current source assignment. See "Calibrating Automatic Aspect Ratio Decoding" on page 110.
NTSC standard	The NTSC and NTSC-J standards are different with regard to their black level. This parameter determines which standard is to be applied to the selected analog input signal.

Subtitling/closed captioning	Presence alarms can be configured against up to four preset Teletext (WST) pages for each input signal. The Teletext page selection parameters determine which pages will be monitored. The Teletext page set as *Page A* will also be decoded, and its content can be displayed in a video window. Requires the CC/XDS option (see "Enabling Options" on page 371). There are also subtitling calibrations for the EIA-608 CC and the DTVCC alarms. See "Calibrating Subtitling/Closed Captioning" on page 112.
Metadata holding time	The holding time parameters determine the delay after which decoded metadata such as closed captions, subtitles, or XDS metadata will be cleared. Requires the CC/XDS option (see "Enabling Options" on page 371). Refer to "Calibrating Metadata Holding Time" on page 113 for details.
Zero VU (dBu)	The Zero VU (dBu) parameters determine the reference level to be applied to the selected analog (from ABT) input signal. Its default value is 4 dBu, on a range of -24 dBu to 8 dBu. See "Calibrating Zero VU Reference Level for an ABT Audio Source" on page 107.
Zero VU (dBFS)	The Zero VU (dBFS) parameters determine the reference level to be applied to the selected digital (embedded, or from ABT) audio signal. dBFS stands for *decibels full scale*. Zero dBFS corresponds to the maximum possible level. By default the reference level for a it is set to -20 dBFS, on a range of -24 dBFS to -8 dBFS. The extraction of digital audio requires the KXS-HD-EMB or KXS-SD-EMB option (see "Enabling Options" on page 371). Refer to "Calibrating Zero VU Reference Level for an Embedded Audio Source" on page 106 for details.
Loudness/dialnorm	The dialnorm value that can be found in the Dolby VANC metadata is an indication of the average level *of dialogue* in the audio stream. The loudness is a measure of the average level of an audio stream. It is possible to configure alarms that will be triggered whenever the measured loudness is not within an acceptable range (1) compared to the encoded dialnorm, or (2) compared to the reference dialnorm for your organization, or (3) when the encoded dialnorm itself deviates too much from the reference dialnorm for your organization. The related parameters determine the loudness measuring standard you wish to apply, the channels that are involved in the measurement, the reference dialnorm level for your organization, and the ranges outside of which alarms will be triggered. Requires the KXS-Loudness option (see "Enabling Options" on page 371). Refer to "Calibrating Dolby VANC Loudness Measurement" on page 107 for details.

Dolby E selection	Dolby E audio can be decoded from one of eight AES pairs within a signal's embedded audio stream. The Dolby E selection parameter determine which AES pair will be used. Requires the KXS-DolbyE option (see "Enabling Options" on page 371). Refer to "Calibrating Dolby E Audio Metadata" on page 109 for details.
Router Output Calibrations	
Switch field selection	The switch field parameter determines whether the router module will perform clean crosspoint changes on the odd (field 1) on the even (field 2) field, or on any field. See "Calibrating Switch Field Selection" on page 115.
SDI output reclocking	The SDI output reclocking parameter determine whether digital video signals will have their timing restored at the selected output, to eliminate jitter. Reclocking is typically used in installations with large routing devices or long cables in the signal path. See "Calibrating SDI Signal Reclocking" on page 116.
GPI/Genlock Calibrations	
GPI line direction	On Kaleido-X systems with a GPI/genlock module, GPI lines can be configured as inputs or outputs. On the Kaleido-X16 and KMV-3901/3911 multi-viewer models, the GPI lines are unidirectional (4 out and 32 in for the Kaleido-X16, 2 out and 8 in for the KMV-3901/3911). In all cases, the state of any GPI output can be set manually for test purposes, by using their ON/OFF calibration. See "Calibrating GPI Lines" on page 117.

Detailed Directions

Multi-Viewer Output Calibrations

Calibrating the Brightness and Contrast

Note: The KMV-3901/3911 multi-viewer does not support brightness and contrast calibrations.

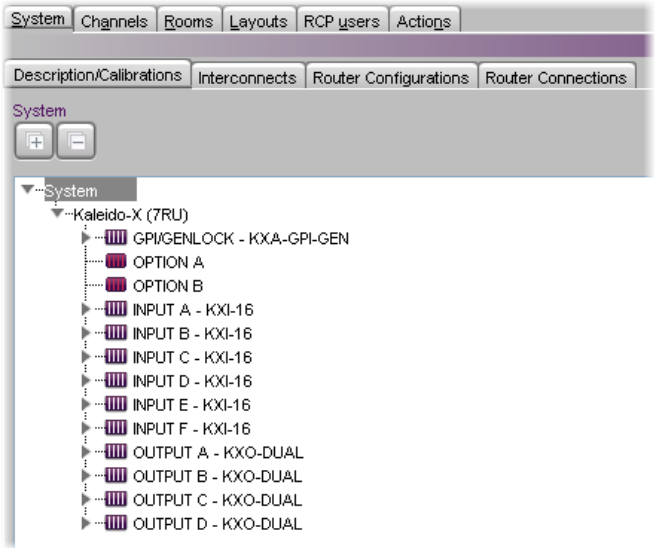
Each of the output heads in the multi-viewer can drive a monitor wall display. For each head, output parameters can be adjusted to optimize the image on the monitor wall display: the brightness parameters set the black offsets of the RGB output signals; and the contrast parameters set the gain offsets of these signals.

To calibrate the brightness and contrast parameters:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

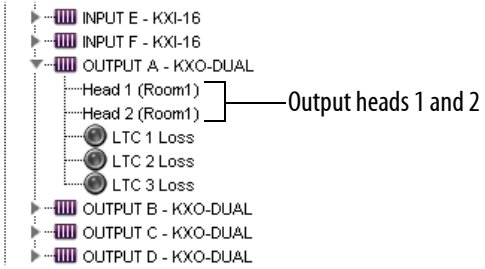
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose output heads you wish to calibrate.



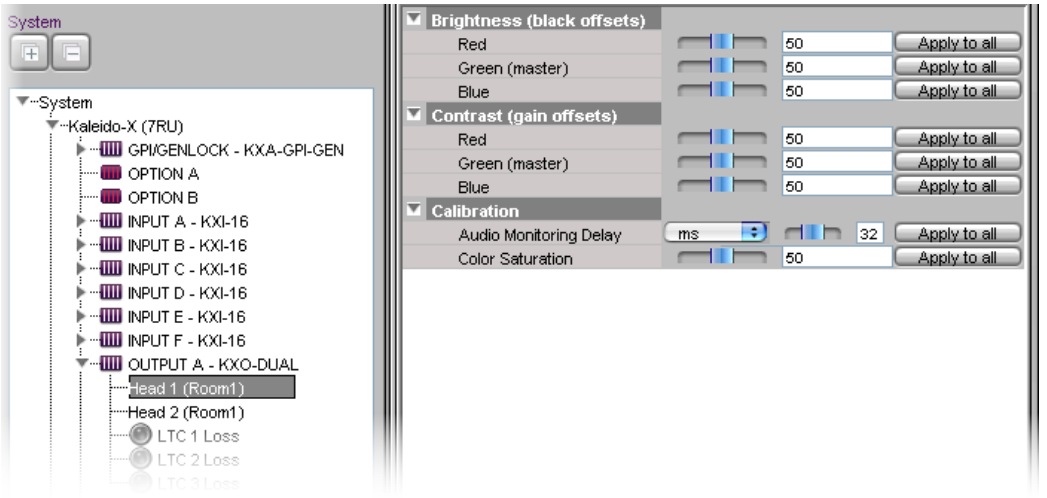
3. Expand the appropriate output module.

   The expanded module will show the output heads. (Depending on the multi-viewer model, other items may also appear.)

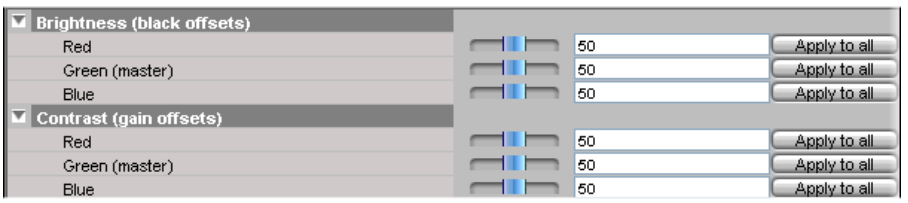


4. Select the head you wish to calibrate.
5. Click the **Properties** tab.

   The brightness and contrast adjustment controls appear. Expand the headings to show the controls if they are not visible.



6. Use the sliders to adjust the brightness and contrast until you obtain a pleasing presentation of the video elements on the monitor wall display driven by the selected head. Alternatively, type values directly in the **Red**, **Green (master)**, and **Blue** boxes.



> **Note:** Moving the **Green (master)** slider will move the **Red** and the **Blue** sliders by the same amount. The values must be between **0** and **100**.
> A good approach is to set all values the same using the **Red** and **Blue** sliders, then to adjust for the best overall presentation using the **Green (master)** slider, and finally to fine-tune the color balance using the **Red** and the **Blue** sliders.

7. If appropriate, you may copy settings from this head *to every output head in the system*. For each value you wish to apply globally throughout your system, click the corresponding **Apply to all** button.

   This has the same effect as selecting every output head one by one, and adjusting the sliders to the same value for the selected parameter.

> **Note:** If you want to apply the same values to all the other output heads in your system, you must click the **Apply to all** button for **Green (master)** FIRST, and then the **Apply to all** buttons for blue and red in any order. Otherwise the values for blue and red would be modified following the application of the value for green.

Calibrating the Color Saturation

> **Note:** The KMV-3901/3911 multi-viewer does not support color saturation calibration.

Each of the output heads in the multi-viewer can drive a monitor wall display. The image on the monitor wall contains both graphic elements created by the Kaleido-X system, and video signals that are passed through the system. It is often useful to be able to modify the color saturation of the video so that its appearance within the graphic environment is pleasing. The **Color saturation** calibration control provides this function.

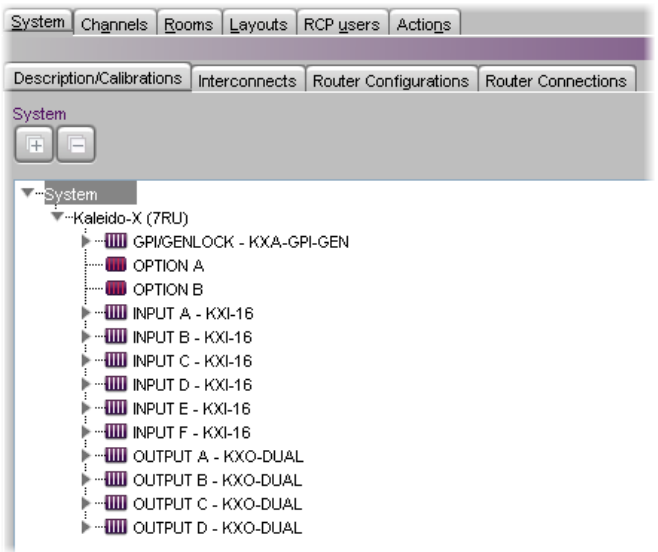
The color saturation calibration does not affect the graphical elements within the monitor wall display.

To calibrate the color saturation:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

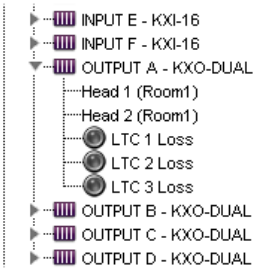
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose output heads you wish to calibrate.



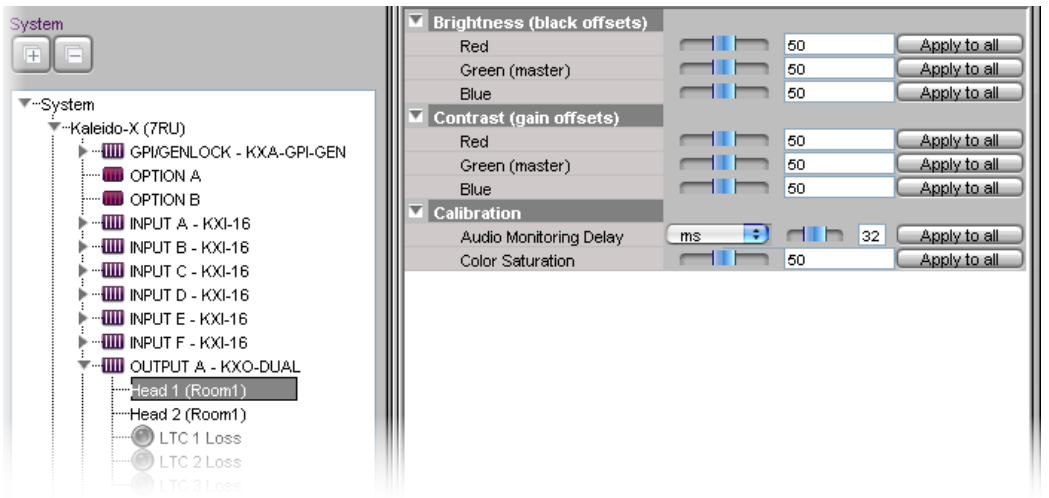
3. Expand the appropriate output module.

   The expanded module will show the output heads. (Depending on the multi-viewer model, other items may also appear.)

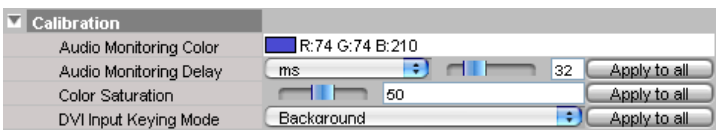


4. Select the head you wish to calibrate.
5. Click the **Properties** tab.

   The color saturation adjustment control appears. Expand the **Calibration** heading to show the control if it is not visible.



6. Use the slider to adjust the color saturation until you obtain a pleasing presentation of the video elements on the monitor wall display driven by the selected head. Alternatively, type a value (between 0 and 100) directly in the **Color saturation** box.


Calibration
Audio Monitoring Color R:74 G:74 B:210
Audio Monitoring Delay ms 32 Apply to all
Color Saturation 50 Apply to all
DVI Input Keying Mode Background Apply to all

> **Note:** All videos on the monitor wall display controlled by the selected head are adjusted simultaneously.

7. If appropriate, you may copy the settings from this head to *every output head* in the system. To apply the color saturation settings globally throughout your system, click **Apply to all**.

   This has the same effect as selecting every output head one by one, and adjusting the **Color saturation** slider to the same value.

Calibrating the DVI Keying Mode

> **Note:** The KMV-3901/3911 multi-viewer does not support DVI keying.

Kaleido-X and Kaleido-X16 multi-viewers have a DVI input connector for every output head. Using these connectors, it is possible to feed keying material to the multi-viewer. Depending on your purposes, the content provided through the DVI input can be set either as a background or as a foreground for the layout shown on the monitor wall.

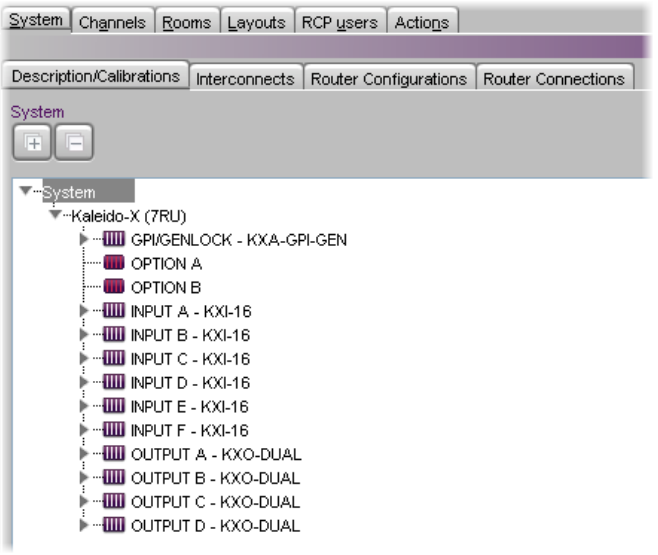
> **Note:** Background keying is enabled by default, and should remain enabled when no actual keying is involved. Enabling the foreground keying mode when there is no signal at the associated DVI input is not supported.

To calibrate the DVI keying mode:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

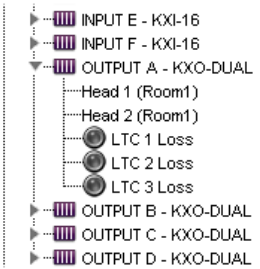
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose output heads you wish to calibrate.

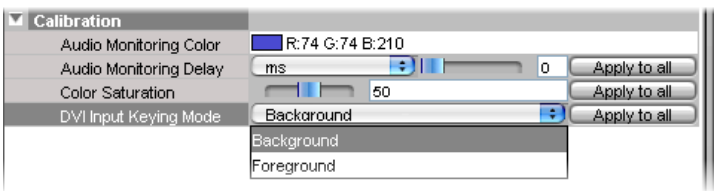


3. Expand the appropriate output module.

   The expanded module will show the output heads. (Depending on the multi-viewer model, other items may also appear.)



4. Select the head you wish to calibrate.
5. Click the **Properties** tab, and then select the appropriate value from the **DVI Input Keying Mode** list:



6. If appropriate, you may copy the settings from this head to *every output head* in the system: to apply the selected DVI input keying mode globally throughout your system, click **Apply to all**.

   This has the same effect as configuring every output head one by one, and selecting the same keying mode for each.

> **See also:** For more information about using content from the DVI input as background, refer to "Setting up a Layout for Background Keying from the DVI Input" on page 184.

Calibrating the Audio Monitoring Delay

Each of the output heads in the Kaleido-X multi-viewer is associated with two audio output channels. The monitoring output is simultaneously available on one AES and two analog connections. For each head, output parameters can be adjusted to optimize the relative timing of the audio and video signals on the monitor wall display. The **Audio monitoring delay** calibration control provides this function.

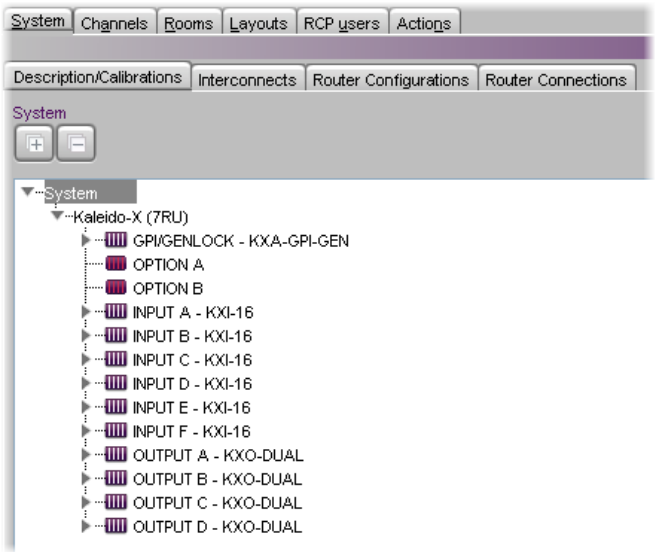
> **Note:** By design, the audio signal is approximately 37 ms ahead of the video.

To calibrate the audio monitoring delay for a head:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

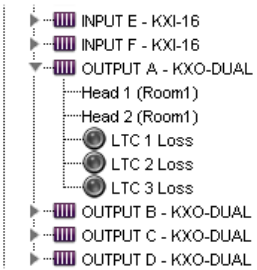
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose output heads you wish to calibrate.



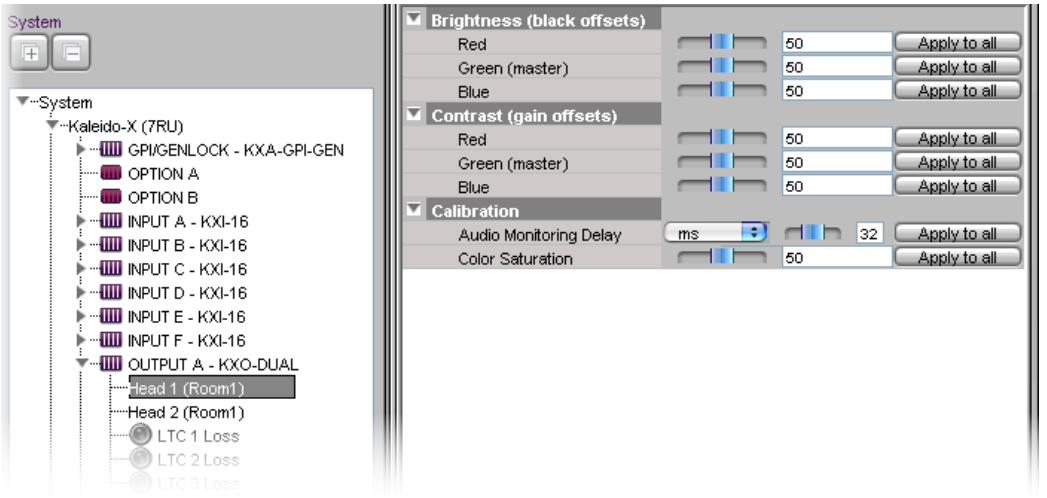
3. Expand the appropriate output module.

   The expanded module will show the output heads. (Depending on the multi-viewer model, other items may also appear.)

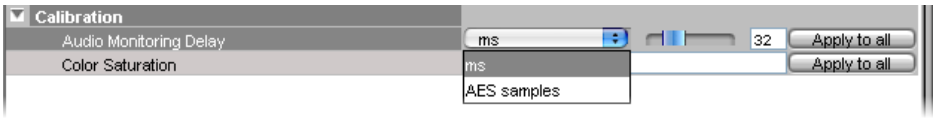


4. Select the head you wish to calibrate.
5. Click the **Properties** tab.

   The audio monitoring delay adjustment control appears. Expand the **Calibration** heading to show the control if it is not visible.



6. Select the appropriate unit (milliseconds or AES samples), and then use the slider to adjust the audio monitoring delay until the audio and video are well synchronized on the monitor wall display driven by the selected head. Alternatively, type a value (between **0** and **100** ms, or between **4** and **4800** AES samples) directly in the **Audio monitoring delay** box.



Note: All videos on the monitor wall display controlled by the selected head are adjusted simultaneously.

7. If appropriate, you may copy the settings from this head to *every output head* in the system. To apply the audio monitoring delay calibration globally throughout your system, click **Apply to all**.

   This has the same effect as selecting every output head one by one, and adjusting the audio monitoring delay settings to the same values.

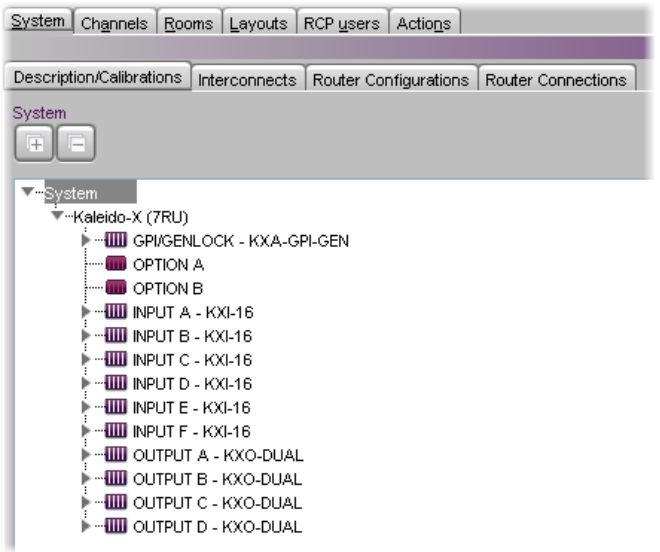
Calibrating the Audio Monitoring Color

To calibrate the audio monitoring color:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

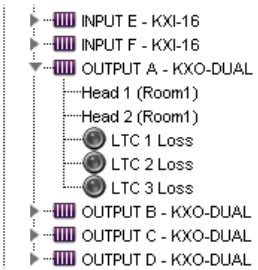
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose output heads you wish to calibrate.

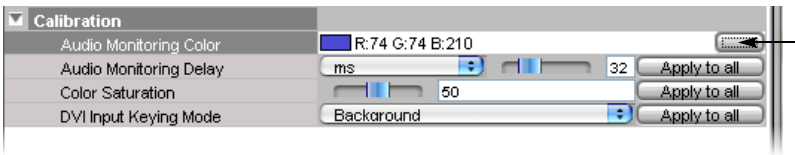


3. Expand the appropriate output module.

   The expanded module will show the output heads. (Depending on the multi-viewer model, other items may also appear.)



4. Select the head you wish to calibrate.
5. In the **Properties** tab, click **Audio Monitoring Color**, and then click the button that appears at the end of the line.



6. In **Pick a Color**, click the tab that corresponds to the color space you wish to use, and then choose the color that will be associated with the selected output head.
7. Click **OK** to close the color picker window.

Multi-Viewer Input Calibrations

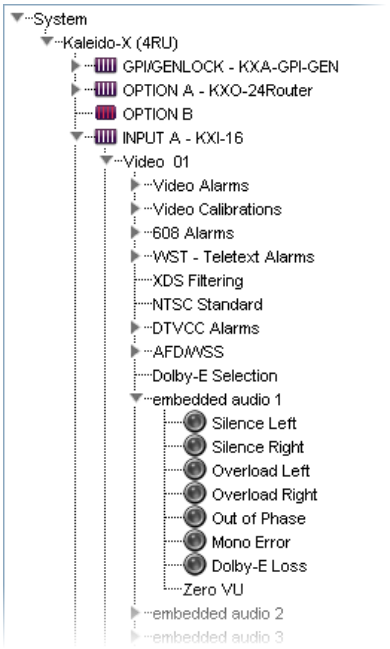
Calibrating Zero VU Reference Level for an Embedded Audio Source

To calibrate an audio source:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

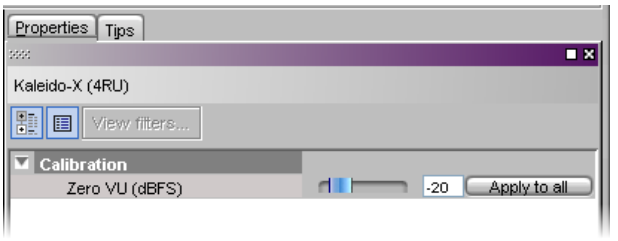
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, then one of its embedded audio elements, and select **Zero VU**.



Zero VU audio selection

4. In the **Properties** pane, set the reference level to the appropriate value (in dBFS), using the **Zero VU** slider, under **Calibration**. Alternatively, type the value directly in the **Zero VU** box.



Zero VU reference level selection

5. Click **Apply to all** to apply the chosen Zero VU reference value throughout the system.

Calibrating Zero VU Reference Level for an ABT Audio Source

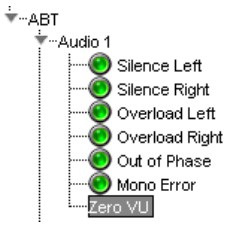
Note: The KMV-3901/3911 only supports embedded audio, not discrete audio sources from an ABT.

To calibrate an ABT audio source:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

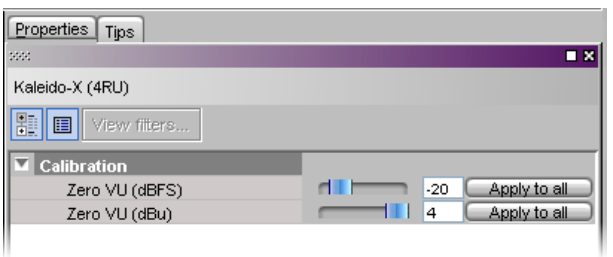
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, its **ABT** element, and then one of the ABT's audio elements. Select **Zero VU**.



ABT Zero VU audio selection

4. Click the **Properties** tab.
5. Set the reference levels to the appropriate values (in dBFS, and in dBu), using the **Zero VU** sliders, under **Calibration**. Alternatively, type the values directly in the **Zero VU** boxes.



Zero VU reference level selection

6. Click **Apply to all** to apply the chosen Zero VU reference values throughout the system.

Calibrating Dolby VANC Loudness Measurement

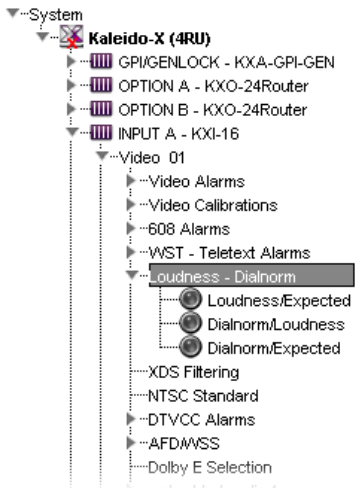
To calibrate an audio source:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

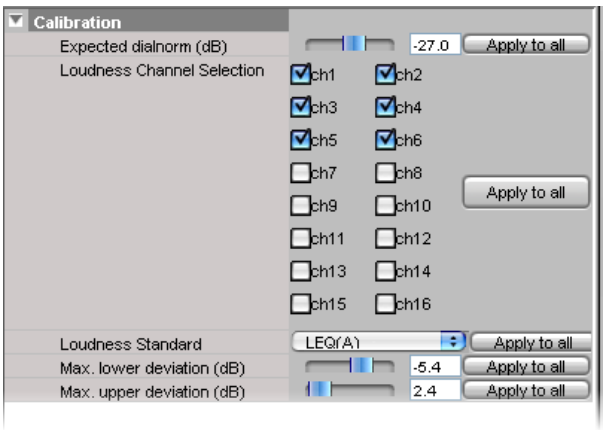
   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.

3. Expand the appropriate input, and then click **Loudness - Dialnorm**.



4. Click the **Properties** tab, and then set the appropriate values for your installation.



The following values are involved:

Parameter	Description
Expected dialnorm	Type your organization's reference dialnorm value in the box, or set it using the slider. The default value is -27 dB, on a scale of -60 db to 0 dB. This value can then be compared against the measured loudness, and against the encoded dialnorm found in the Dolby VANC data.
Loudness Channel Selection	Select the check boxes corresponding to the audio channels that should contribute to the loudness measurement.
Loudness Standard	Select the standard you wish to apply: either the A-weighted Leq (**LEQ(A)**) or the **ITU-R BS.1770** metering ballistics.

Parameter	Description
Max. lower deviation	The Max. lower deviation parameter determines the tolerated excursion range below the reference value. The measured levels and the encoded dialnorm can be compared against each other and against your organization's expected dialnorm, and alarms triggered in case of too much deviation.
Max. upper deviation	The Max. upper deviation parameter determines the tolerated excursion range above the reference value. The measured levels and the encoded dialnorm can be compared against each other and against your organization's expected dialnorm, and alarms triggered in case of too much deviation.

Calibrating Dolby E Audio Metadata

Notes

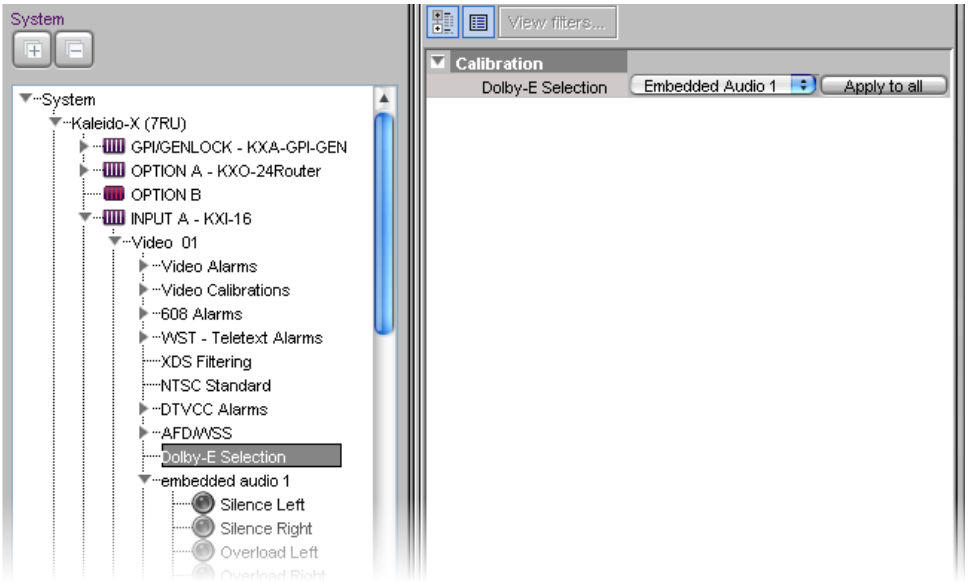
- Dolby E decoding can be enabled by purchasing the Dolby E option (KXS-DolbyE). One license is needed per input card. See “Enabling Options” on page 371.
- Dolby E decoding is not yet supported on the Audio Bridge Terminal (ABT).

To calibrate audio metadata:

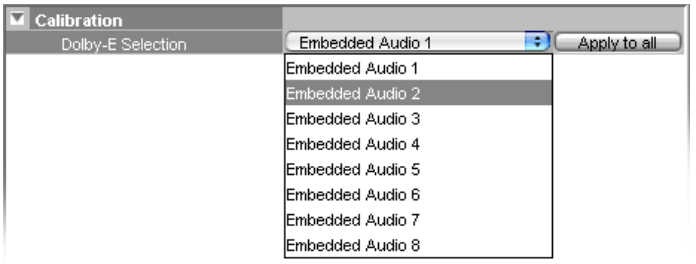
1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, and then click **Dolby E Selection.**



4. Click the **Properties** tab.
5. In the **Dolby E Selection** list, choose the AES pair (embedded audio 1 to embedded audio 8) to be decoded in Dolby E:



Calibrating Automatic Aspect Ratio Decoding

Aspect ratio information can be encoded following different standards. The following table shows the different standards and their availability according to the signal type:

Standard	Signal type		
	HD	SD 525	SD 625
WSS	—	—	Yes
AFD VI	—	Yes	Yes
AFD 2016	Yes	Yes	Yes

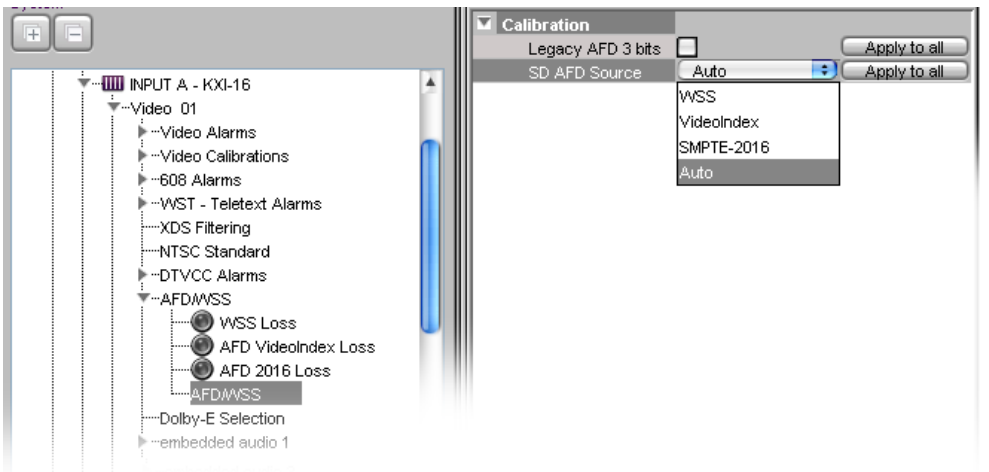
Note: For AFD VI, the AFD can be encoded as 4 bits or 3 bits (legacy).

To select the AFD source for an SD signal:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, and then click **AFD/WSS**:



4. Click the **Properties** tab.
5. Select **Legacy AFD 3 bits** to support the legacy AFD 3-bit format for the Video Index.
6. Select the appropriate value from the **SD AFD Source** list.

   The default value is **Auto** which means that the multi-viewer will automatically detect what is present in the signal and use it to report AFD. If more than one AFD type is present in the signal, and the **SD AFD Source** is set to **Auto**, then AFD type is selected in this order: (1) AFD-2016 first, (2) AFD-VI, or (3) WSS.

   Note: For an HD signal, the AFD is always AFD-2016, so no calibration is needed.

7. Click **Apply to all** to apply the associated setting to all video inputs on your multi-viewer.

Calibrating Detail Enhancement and Dynamic Range

Note: The KMV-3901/3911 multi-viewer does not support detail enhancer calibrations.

To configure detail enhancement and dynamic range for a video signal:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, then one of its Video elements.
4. Under **Video Calibrations**, click **Detail Enhancer**, and then set the appropriate value (between 0 and 15) in the **Properties** tab.

5. Click **Dynamic Range**, and then set the appropriate value (either **Full Range** or **Video Range**) in the **Properties** tab.

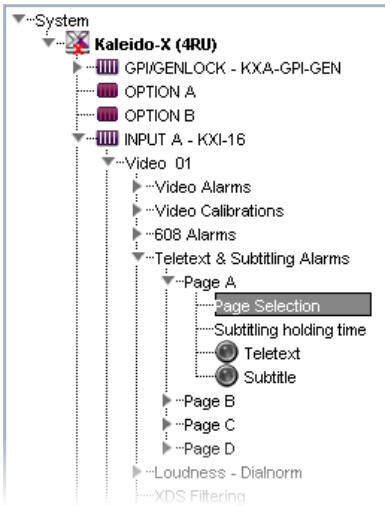
Calibrating Subtitling/Closed Captioning

To configure Teletext/Subtitling page selection:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate input, then one of its Video elements.
4. Under **Teletext & Subtitling Alarms**, expand the **Page A** element, and then click **Page selection**:



5. In the **Properties** pane, type the page number you wish to be the default selection for Page A, in the **Teletext Page A Selection** box. Alternatively, use the slider to set the page number:

6. Click **Apply to all** if you wish this setting to be the default Page A selection for every video signal on your system.
7. Repeat the procedure for the Page B, C, and D elements.

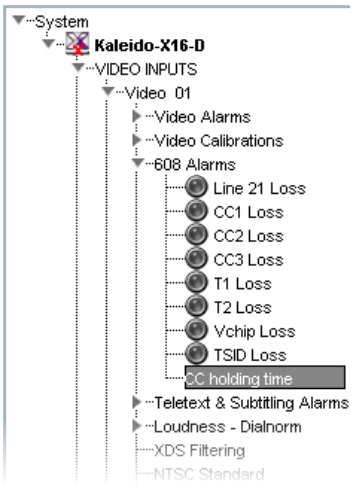
> **Note:** On the monitor wall, only Page A will be available with the associated video signal. However, alarms can be configured for all four preset pages. See "Configuring Alarm Debouncing" on page 128 for instructions on how to configure an alarm.

Calibrating Metadata Holding Time

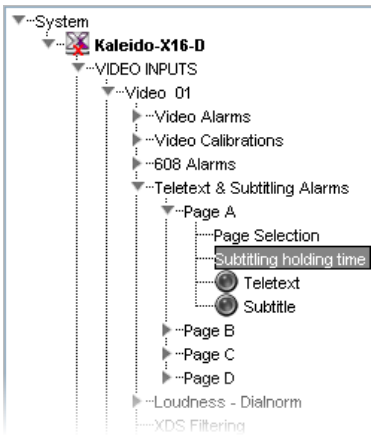
To calibrate metadata holding time:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.
2. In the list, expand the multi-viewer whose inputs you wish to calibrate.
3. Expand the appropriate Video element, select the metadata element whose holding time you wish to configure, and then set the relevant values under **Calibration** in the **Properties** tab:

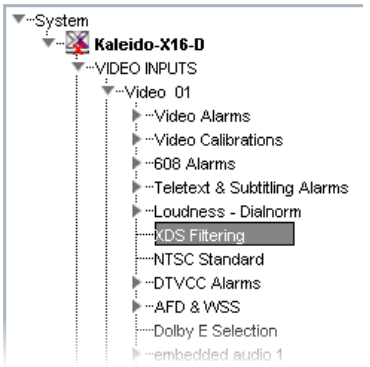
CC holding time: 	Set the delay (between 5 and 360 seconds) after which closed captions (608) are cleared:

Subtitling holding time:

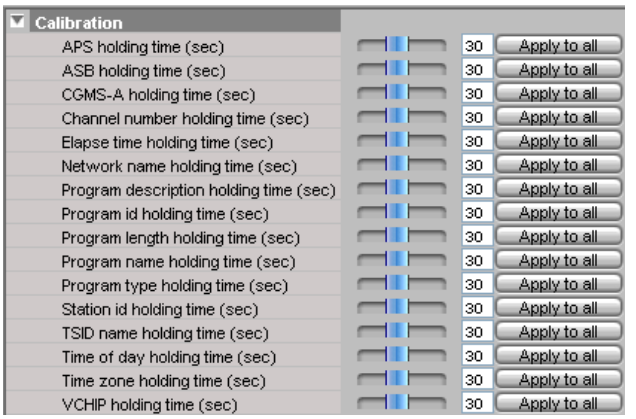


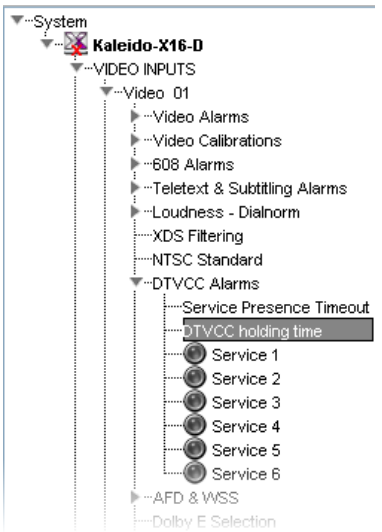
Set the delay (between 5 and 360 seconds) after which subtitles are cleared:

XDS filtering:



Set the holding time (between 5 and 360 seconds) for each XDS metadata element (APS, ASB, CGMS-A; channel number; elapsed time; network name; program description, ID, name, length, and type; station ID; TSID name; time of day; time zone; V-chip rating).


Calibration
APS holding time (sec) 30 Apply to all
ASB holding time (sec) 30 Apply to all
CGMS-A holding time (sec) 30 Apply to all
Channel number holding time (sec) 30 Apply to all
Elapse time holding time (sec) 30 Apply to all
Network name holding time (sec) 30 Apply to all
Program description holding time (sec) 30 Apply to all
Program id holding time (sec) 30 Apply to all
Program length holding time (sec) 30 Apply to all
Program name holding time (sec) 30 Apply to all
Program type holding time (sec) 30 Apply to all
Station id holding time (sec) 30 Apply to all
TSID name holding time (sec) 30 Apply to all
Time of day holding time (sec) 30 Apply to all
Time zone holding time (sec) 30 Apply to all
VCHIP holding time (sec) 30 Apply to all

DTVCC holding time: 	Set the delay (between 15 and 360 seconds) after which closed captions (708) are cleared:

You can type the value directly in the boxes, or use the slider controls.

Router Output Calibrations

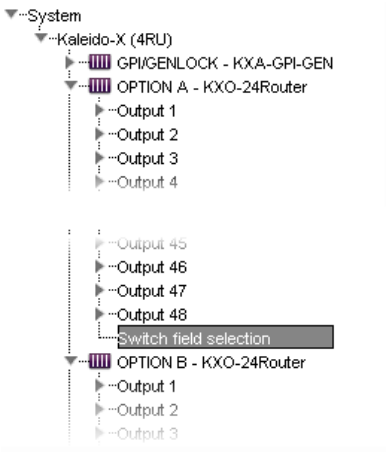
Calibrating Switch Field Selection

To calibrate switch field selection for a router module:

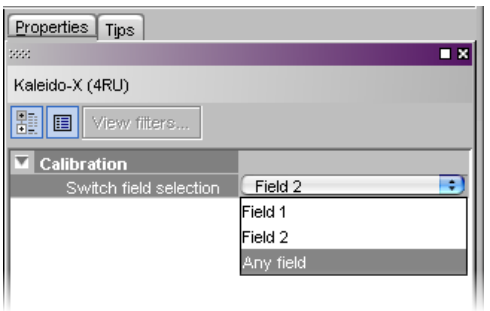
1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer you wish to calibrate.
3. Expand the appropriate router module, and then click **Switch Field Selection**.



4. In the **Properties** tab, click the **Switch Field Selection** box, and then select the appropriate field value from the list.



Switch field selection

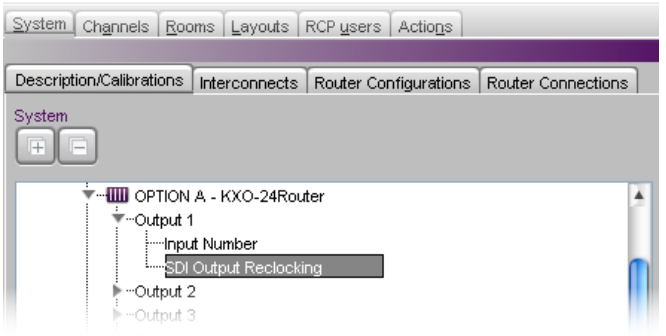
Calibrating SDI Signal Reclocking

To calibrate reclocking of a router module's output signal:

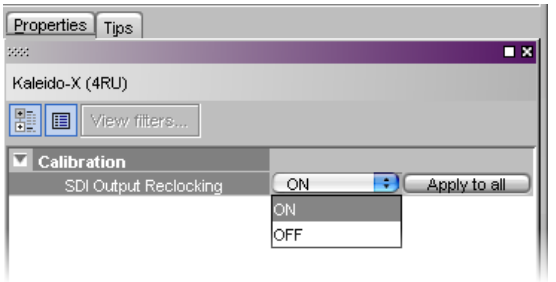
1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer you wish to calibrate.
3. Expand the appropriate router output, and then click **SDI Output Reclocking**.



4. In the **Properties** tab, click the **SDI Output Reclocking** box, and then select **ON** or **OFF** from the list.



5. Click **Apply to all** to apply the chosen value throughout the system.

GPI/Genlock Calibrations

Calibrating GPI Lines

You can define actions that change the state of a GPI output line, and assign them to a monitor. GPI lines configured as outputs can have their ON/OFF state set manually in XEdit, for test purposes.

> **Note:** GPI direction is pre-defined on the Kaleido-X16 and KMV-3901/3911 multi-viewers.

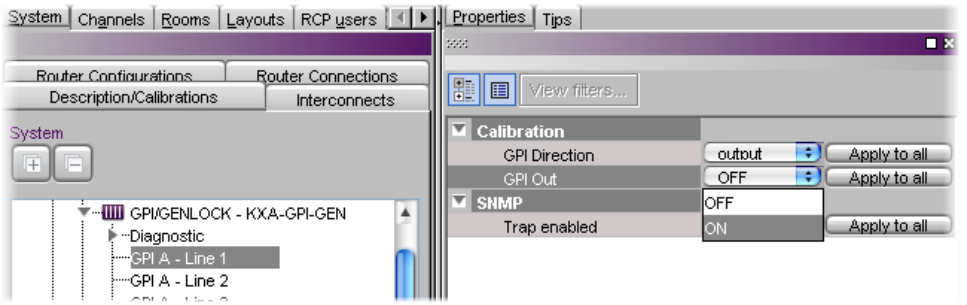
To configure a GPI line's direction as an output:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. In the list, expand the multi-viewer you wish to calibrate.
3. Expand the GPI/GENLOCK module, and then click the appropriate GPI line element.
4. In the **Properties** tab, click the **GPI Direction** box, and then select **output** from the list.
5. Click **Apply to all**, if every GPI line in your system is to be configured as an output.

6. To set this GPI output line's ON/OFF state set manually for test purposes, click the **GPI Out** box, and then select either ON or OFF from the list.



6 Configuring Alarms

Your Kaleido-X system can help you monitor alarm conditions efficiently. This section describes how to configure alarm detection and alarm sharing parameters for your system. This configuration is made in XEdit.

Summary

Configuring Video/Audio Alarm Threshold 125
Configuring Alarm Debouncing 128
Sharing Alarm Status Information Between Multi-Viewers and iControl 128
Publishing Alarms to SNMP Devices 131

Key Concepts

Alarm Debouncing

Alarm debouncing allows the filtering of false alarms. To filter false alarms several parameters can be calibrated, including the duration of the potential alarm event, how often this event occurs during a specific period called the *detection window*, and the length of this detection window.

An alarm occurrence (not the alarm itself) is detected when a probe is in a continuous error state for the number of seconds specified in the **Duration** debouncing parameter. The actual alarm is triggered when the number of occurrences reaches the value set as the **Occurrences** parameter within the period specified as the detection window. The alarm status will revert to normal as soon as the probe returns a normal

state. Alarm occurrences that are older than the number of minutes specified as the **Detection window** parameter are discarded. The default debouncing parameters are as follows:

Duration	5 seconds
Occurrences	3
Detection window	1 minute

Alarm Status

The current status of an alarm determines the color of the LED-like icon to the left of its name. Each possible alarm status is represented by a color. Alarm statuses are dynamically updated.

XEdit supports the following alarm status values:

Normal or OK	No error detected
Warning or Minor	Supported for Gateway alarms only
Major	Supported for Gateway alarms only
Error or Critical	Error detected
Disabled	Covers multiple conditions: **No alarm assigned to the status indicator:** Alarm exists but is disabled at the source by the user. The Kaleido-X has the ability to deactivate some alarms on the hardware itself. **Alarm exists but was not reported yet:** The software is waiting for the hardware or driver to update the alarm. **Alarm that has been removed (or was never added):** It can happen if the alarm reference in XEdit does not exist on the multi-viewer— for example, if a KXI card is removed from a Kaleido-X multi-viewer. All associated alarms will disappear and become disabled on the multi-viewer. **Could not get status:** Failed to communicate with device to get status. It could happen for example, if the network connection is lost. Another example is a loss of signal that would trigger a critical alarm for signal presence while the alarm state for all other parameters would become unknown. The freeze or black status is disabled if the signal is not present.

Alarm Suppression

Alarms that are not relevant—momentarily or on a recurrent basis—can be squelched, either manually or by defining schedules, so that only meaningful alarm information remains to be monitored.

Global Alarms

A logical source comprises different level categories, including alarms. Each logical source can include multiple alarm levels: one for each alarm state that can be reported to the Kaleido-X system. In many cases, a single, combined status, based on all the alarms in every alarm level for a logical source, is more useful than having to individually assess each and every alarm condition detected. Such a global alarm combines all the individual alarm statuses into an overall status, where the most critical events take precedence.

Example: Three alarms occur, two of which can be acknowledged without further action, while the other one is considered an Error. In such a case, the overall alarm status would be Error.

Each logical source has one global alarm for its alarms only. The global alarm cannot be configured and is not exposed in the **Channels/Sources** tab. It can only be assigned to a layout element that supports alarm levels, like a UMD or an alarm monitor. In the **Properties** pane, the lists of alarm levels that can be assigned to a monitor include the item *GlobalAlarm*, along with all the individual alarm levels.

You can select this global alarm not only as an alarm status, but also as a text label level. When an individual alarm is in Error, its friendly name will contribute to the global alarm text value. When the global alarm level is assigned to an alarm monitor, the text values for all contributing alarms currently in Error will be visible.

Virtual Alarm

A virtual alarm is a special type of alarm that allows you to derive a new result from the status(es) of one or more existing alarms.

> **Note:** For detailed information about virtual alarms and related features, please refer to the iControl User Guide.

Sub-Alarm

A sub-alarm is an alarm that contributes to the status of a higher-level virtual alarm. The effect of a sub-alarm's contribution is determined by the way in which the higher-level alarm is configured.

Alarm Monitor

Alarm monitors help you see the status of global and virtual alarms, but their use is not limited to this type of alarms. When any alarm level is assigned to an alarm monitor, the status of this alarm will be shown. When using the global alarm at the text label level, it will display the text value of the alarm, which is a readable name. See "Configuring Alarm Monitors" on page 216, for more information.

Teletext, Subtitles, and Closed Captions

Teletext subtitling (based on WST or OP-47), NTSC closed captioning (EIA-608), and ATSC Digital Television Closed Captioning (EIA-708 DTVCC) can be displayed on the monitor wall, allowing visual monitoring of decoded text from an analog or SDI video source. The lines of text extracted from the video source metadata are displayed within the corresponding video window.

Teletext may comprise up to 799 pages of displayable data (numbered from page 100 to 899). Teletext subtitles are decoded as described by the ETSI ETS 300 706 standard. At any time, only one page can be decoded per video monitor and only one page can be decoded per video source, for monitoring purposes. In addition, the multi-viewer can monitor the presence of up to three more pages (without decoding their content). Refer To "Setting a Video Monitor's Text Mode" on page 198, and "Displaying Subtitles and Closed Caption Text" on page 44, for more information.

The following table contains a list of supported video formats, and the type of captioning, teletext, or subtitling data that is decoded by default for each video format, when a video monitor's text mode is set to **Auto sense**: DTVCC (708), CC (608), teletext (OP-47 or WST), or none.

> **Note:** The EIA-708 standard supports legacy EIA-608 data. In the case of an HD-SDI source carrying both 708 captions and 608 legacy caption data, the multi-viewer will display the 708 captions, and automatically fall back to displaying the 608 captions only if the 708 data becomes unavailable.

Video format	Decoded data	Video format	Decoded data
720p 59 94 Hz	DTVCC (708)	SDI 525 507 generic	CC (608)
720p 59 94 Hz EM	DTVCC (708)	720x480p 59 94 Hz	DTVCC (708)
720p 29 97 Hz	DTVCC (708)	UNKNOWN HD	None
720p 29 97 Hz EM	DTVCC (708)	UNKNOWN SD	None
720p 50 Hz	Teletext	INVALID	None
720p 50 Hz EM	Teletext	NTSC-M	CC (608)
720p 25 Hz	Teletext	PAL-BGDHI	Teletext
720p 25 Hz EM	Teletext	PAL 60 Hz	Teletext
720p 24 Hz	DTVCC (708)	NTSC 50 Hz	CC (608)
720p 24 Hz EM	DTVCC (708)	NTSC 4.43	CC (608)
1080i 59 94 Hz 30 Hz PSF	DTVCC (708)	PAL-N	Teletext
1080p 29 97 Hz	DTVCC (708)	PAL-M	Teletext

Video format	Decoded data
1080i 50 Hz 25 Hz PSF	Teletext
1080p 25 Hz	Teletext
1080p 25 Hz EM	Teletext
1080 25PSF EM	Teletext
1080p 23 98 Hz 24 Hz	DTVCC (708)
1080p 23 98PSF 24PSF	DTVCC (708)
1080p 24 Hz EM	DTVCC (708)
1080 24PSF EM	DTVCC (708)
1080i 50 Hz	Teletext
1035i 59 94 Hz	DTVCC (708)
SDI 525	CC (608)
SDI 525 507	CC (608)
SDI 625	Teletext
SDI 525 487 generic	CC (608)
SDI 625 generic EM	Teletext

Video format	Decoded data
NTSC-N	CC (608)
NTSC-J	CC (608)
SECAM	Teletext
Component Y Only 525	None
Component Y Only 625	None
UNAVAILABLE	None
XGA	None
SXGA	None
WXGA	None
WSXGA PLUS	None
UXGA	None
UNSUPPORTED DVI	None
1080p 59.94 Hz	DTVCC (708)
1080p 50 Hz	Teletext

Dolby E/AC-3 Metadata

Metadata (*Dialnorm* and *Program config*) information contained in a Dolby E audio stream can be exposed on the monitor wall in text form. Dolby E and PCM audio levels can be displayed via audio monitors. Decoding of Dolby E metadata embedded as ancillary data (VANC) in the video stream is also supported.

- If multichannel audio (up to 8 channels) is coded in a Dolby E stream and transported over a single AES channel, metadata and audio levels are extracted from the Dolby E stream:
  - Limited to 1 embedded audio source, selectable, no ABT support
  - VU and Peak meters (8 channels), for each source
  - Program config, for each source
  - Dialnorm for program 1, for each source
- If multichannel audio (up to 16 channels) is transported as regular AES channels (up to 8) in the SDI embedded audio, metadata is extracted from VANC packets:

- Program config
- Dialnorm for program 1
- VU and Peak meters come from the AES in PCM

Definitions

Term	Definition
Dolby E Stream	A coded (compressed) 8-channel digital stream that fits inside an AES channel (L/R)
Dolby Metadata	Metadata of Dolby E type such as *dialnorm* and *program config*
Dolby E Extracted [Metadata]	Dolby metadata extracted from a Dolby E stream. Includes audio level data from encoded audio data
VANC Extracted [Metadata]	Dolby metadata extracted from VANC packets. Audio level data is probed directly from the PCM AES signal
Embedded audio source or channel	1 of the 8 SDI or HD-SDI embedded audio AES signals
AES Signal or Source	A bit stream for audio service
Multichannel Audio	Audio service or essence composed of more than 2 channels of audio (more than Left and Right)

Audio Format

The format of each audio channel (PCM, Dolby AC-3, Dolby E, other or Unavailable) is reported as a text attribute, that can be assigned to a text level within a logical source.

Metadata

The metadata extracted from the VANC and from the Dolby E is available as text in the XEdit hierarchical system list, and therefore can be exposed via any layout element capable of displaying text levels from logical sources (currently only UMDs).

Dialnorm is displayed as a numeric value between -31 and -1 dB. *Program Config* is displayed as the Dolby E Program Config description. *Unavailable* is displayed if the source is not being decoded, or is not Dolby E.

Logical Source Assignment

Logical source assignment is performed by dragging an AES pair onto a logical source's audio level.

For Dolby E, if the AES pair is calibrated as a Dolby E source, then the 8 channels are available to be displayed by an audio monitor. The channel displayed by the audio monitor depends on how the monitor was configured.

For Dolby VANC, if the audio monitor is set to **Auto** or **Dolby VANC**, the VANC metadata from the video of the assigned AES will be decoded. The audio monitor will have access to all amended audio peaks depending on VANC program configuration (regardless of which AES pair was assigned to the logical source).

Detailed Directions

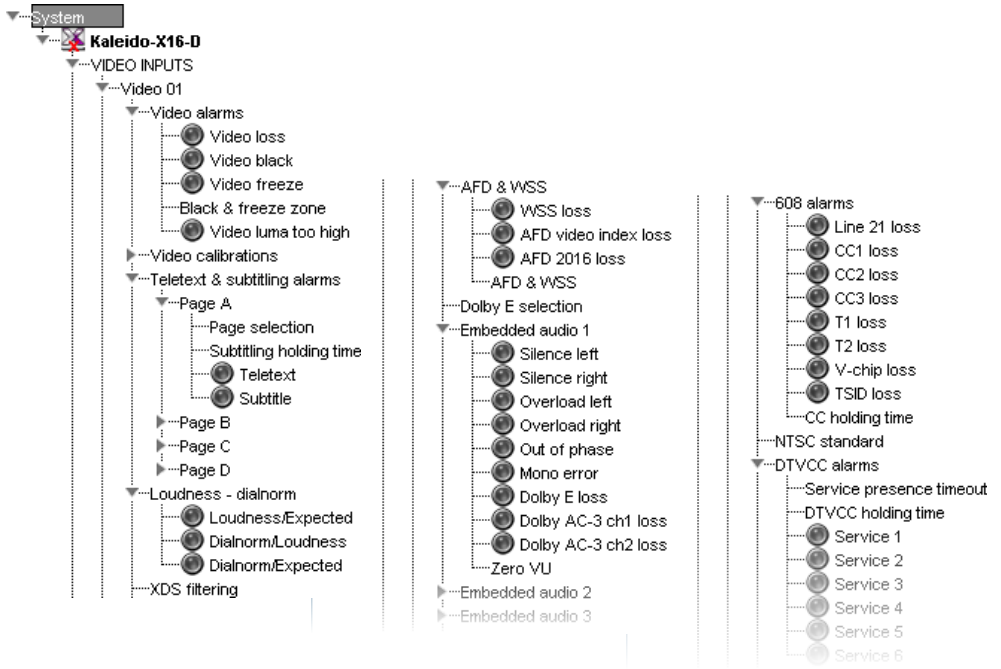
Configuring Video/Audio Alarm Threshold

To configure the threshold for a video or audio alarm:

1. Connect to the multi-viewer you wish to configure, if you wish to apply the changes in real time (see "Connecting to a Multi-Viewer" on page 70).

   Note: If this step is omitted, then you will need to export the database to apply the calibration changes.

2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.
3. Navigate to the alarm whose threshold you wish to calibrate, by expanding the appropriate multi-viewer input, one of its Video elements, and then the alarm-related elements (or the ABT element, and then one of the ABT's audio elements).



Example of alarms related to video and embedded audio input signals

4. In the **Properties** tab, set the relevant values under **Calibration**.

Video Calibrations	
Black detection threshold	Set the level (in IRE or mV) below which the signal will be considered to be black. By default the threshold is set at 8 IRE, and the alarm will be triggered after 3 occurrences of at least 5 seconds of black within a period of 1 minute.
Luma too high detection threshold	Set the level (in IRE or mV) above which Luma Too High will be reported.
Freeze sensitivity	Freeze detection is done by comparing successive frames. Noise in the signal could disrupt this process, so filtering is added to remove it. Adjust the sensitivity according to the signal being monitored, on a range of 0 (for a noisy signal) to 16 (for a clean signal). By default the sensitivity is set at 8, and the alarm will be triggered after 3 occurrences of a least 5 seconds of freeze within a period of 1 minute. Once the alarm is triggered it will only be released if no other freeze condition is detected over the specified reset delay period (by default, there is no delay), in order to avoid unwanted alarm flickering that could be caused by glitches on the signal.

Reset delay	The alarm reset delay is the time allowed for a *Video Freeze* alarm state to be normal before the system actually clears the alarm. This helps eliminate the false releasing of Video Freeze alarms. The default value is 0, on a range of 0 to 60 seconds. Note that when setting the reset delay to any value other than 0, it may happen that the freeze alarm will only be released after a long time (longer than the value of the reset delay) if the video has short-duration freezes during the reset delay interval.
SD/HD detection zone	Determine the video window area to be monitored for Freeze and Black detection. Two detection zones can be configured: one for SD signals, one for HD signals.
Audio Calibrations	
Overload left/right	Select the level (in dBFS, dB, or dBu, depending on the signal source) above which the audio signal will be considered overloaded.
Silence left/right	Select the level (in dBFS, dB, or dBu, depending on the signal source) below which the audio signal will be considered silenced.
Out of phase	Select the sensitivity level below which the audio signal will be considered out of phase. The sensitivity is a value between -1 and +1, where -1 means completely out of phase and +1 means perfectly in phase.
Mono	An audio source is considered to be mono if the left and right signals are perfectly in phase (i.e. more likely to be the same). Select the sensitivity level above which audio will be considered mono. The sensitivity is a value between -1 and +1, where -1 means that everything is considered to be mono, and +1 means that only perfectly in phase audio will be considered mono.
Metadata Calibration	
DTVCC service presence timeout	Set the delay (in seconds) after which a service presence alarm will be triggered. This calibration applies to the six standard services. The default value is 30 seconds, on a range of 1 to 360.

Note: The video and metadata calibrations do not apply to the current version of the KMV-3901/3911 multi-viewer.

Configuring Alarm Debouncing

To configure alarm debouncing:

1. Connect to the multi-viewer you wish to configure, if you wish to apply the changes in real time (see "Connecting to a Multi-Viewer" on page 70).

   Note: If this step is omitted, then you will need to export the database to apply the new calibrations to the multi-viewer.

2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.
3. Navigate to the alarm whose debouncing you wish to calibrate, by expanding the appropriate multi-viewer input, one of its Video elements, and then the alarm-related elements (or the ABT element, and then one of the ABT's audio elements).
4. In the **Properties** pane, under **Debouncing**, set appropriate values for every attribute:

   Example: For a *Silence Left* alarm, configured with a threshold of -47dBFS, alarm debouncing could be set as follows:
   - **Detection window**: 1 minute
   - **Duration**: 5 seconds
   - **Occurrences**: 2

   This means that, if the audio left peak falls below the silence threshold (-47 dBFS), and stays below this threshold for the selected duration (5 seconds), then an *error event* will be recorded (note that this event is not an alarm). The actual Silence Left alarm will be triggered when the number of recorded error events reaches the selected number of occurrences (2) within the detection window (1 minute).

Sharing Alarm Status Information Between Multi-Viewers and iControl

The integration of iControl's alarm management features into the Kaleido-X Software, allows the following:

- Display alarm status information from Densité cards on the monitor wall.
- Display alarms detected within a Kaleido-X system on an iControl Web page.
- Display alarm status information in XEdit (online mode).
- Create virtual alarms that combine a number of alarm statuses, not only within a single system, but also from different devices within multiple Kaleido-X and iControl systems.

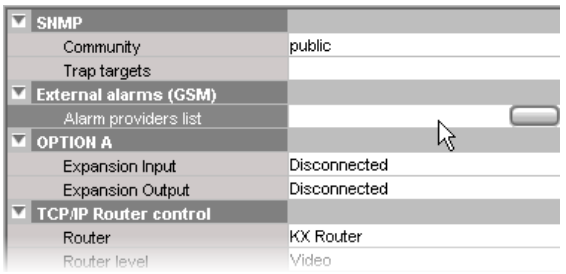
Adding Alarm Providers

To add alarm providers to your Kaleido-X system:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. Click the multi-viewer whose alarm providers you wish to define.
3. In the **Properties** tab, click the **Alarm providers list** box.

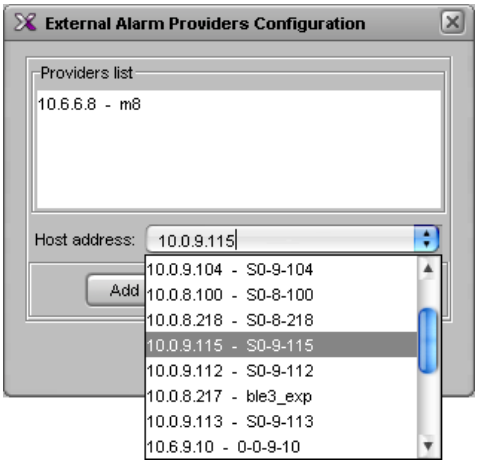


4. Click the button that appeared at the end of the box to open the **External Alarm Providers Configuration** window.

5. Add or remove alarm providers as needed, and then click **OK** to confirm and apply the changes, or click **Cancel** to close the window without saving your changes to the external alarm providers list.

To add an alarm provider to the list:

1. Select the appropriate device from the **Host address** list. Alternatively, you can type its IP address in the box.



2. Click **Add**.

   The alarm provider is added to the list.

To remove an alarm provider:

- In the **Providers list** box, select the provider you wish to remove and then click **Remove**.

  The alarm provider is removed from the list.

Enabling Alarm Logging

As part of the alarm calibration process, you can specify that an alarm, when triggered, be logged to an iControl application server that has a GSM log plug-in configured for this multi-viewer.

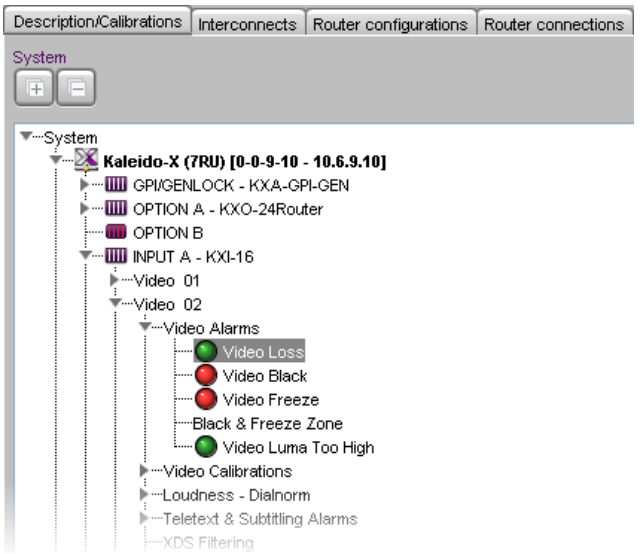
> **Note:** By default, native alarms are not logged, but virtual alarms and global alarms are always logged. In addition, when a virtual alarm status changes, then the native sub-alarms that triggered the change are logged even if logging is disabled for these native alarms. It is possible, however, to disable alarm logging for a virtual alarm or for a global alarm, by editing the corresponding plug-in from the iControl application server's GSM alarm browser. Refer to the iControl User Guide, for more information.

To choose the alarms that will be logged to the GSM configured for this system:

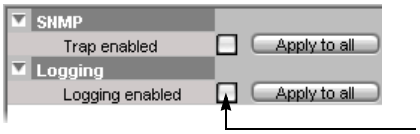
1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. Expand the multi-viewer whose alarms you wish to log, navigate to the appropriate alarm, and then click the alarm to select it.



3. In the **Properties** tab, select the **Logging enabled** check box to have the multi-viewer publish this alarm to the application server's log, each time this alarm is triggered:



4. Click **Apply to all** if you wish to apply this setting to *all other alarms with the same name*, throughout the system.

   In the example, clicking **Apply to all** will enable logging for the Video Loss alarm on every multi-viewer input in your system.

5. Repeat the procedure until logging is enabled for all desired alarms.
6. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Publishing Alarms to SNMP Devices

> **Note:** This section does not apply to the current version of the KMV-3901/3911 multi-viewer. This multi-viewer model does not support SNMP-related calibrations and settings.

The Kaleido-X and Kaleido-X16 multi-viewers support the use of Simple Network Management Protocol (SNMP) traps to notify an external SNMP manager of significant events. These significant events are flagged within the Kaleido-X system as alarms.

Two actions are required to set up the SNMP trap process on the Kaleido-X:

- Identify the targets (SNMP managers) to which SNMP traps will be sent.

- Choose the traps that will be sent to the selected SNMP managers.

Defining Target SNMP Managers

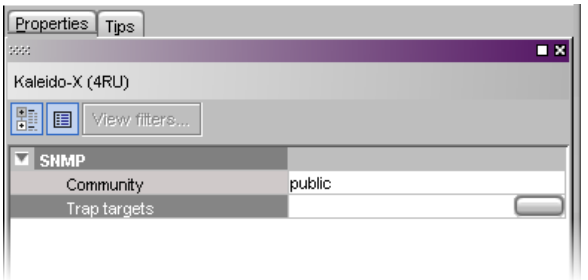
To define target SNMP managers:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. Click the multi-viewer whose SNMP trap targets you wish to define.
3. In the **Properties** tab, click the **Community** box (which contains "public" by default), and then type a new name for the group of target SNMP managers.

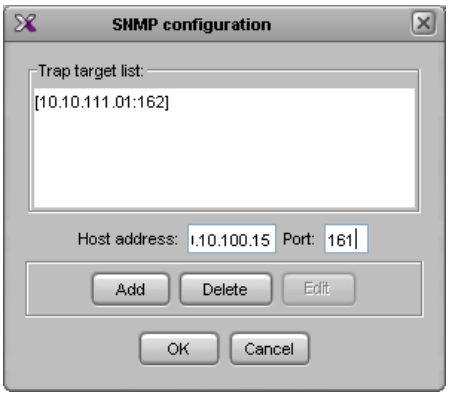
4. Click the **Trap targets** box.



5. Click the button that appeared at the end of the box to open the **SNMP Configuration** window.

   The trap targets list shows all trap targets currently identified for the selected multi-viewer.

   SNMP Managers that are trap targets for this multi-viewer are identified by their host address and port number.



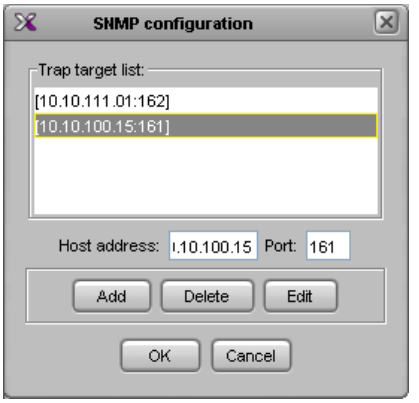
6. Add, remove, or modify trap targets as needed, and then click **OK** to confirm and apply the changes, or click **Cancel** to close the **SNMP Configuration** window without saving your changes to the trap targets list.

To add a trap target to the list:

1. In the **Host address** box, type the IP address of the device that has the target SNMP manager.
2. In the **Port** box, type the port number through which the SNMP manager will be accessed.
3. Click **Add**.

   The new trap target is added to the list.

To modify an existing trap target:



1. Click the trap target you wish to modify in the list.

   It becomes highlighted and its host address and port number appear in the data boxes, and the **Edit** button is available.
2. Type new or revised data in the data boxes.
3. Click **Edit**.

   The revised data appears in the target list.

To remove a trap target from the list:

1. Click the trap target you wish to remove in the list.

   It becomes highlighted and its host address and port number appear in the data boxes.
2. Click **Delete**.

   The trap target is removed from the list.

> **Note:** The host address and port number remain in the data boxes. Hence the trap can easily be added back to the list, by clicking **Add**, if it was removed in error.

Enabling SNMP Traps

The multi-viewer analyses the signals that pass through it, and can detect and flag problems by raising alarms. Each alarm can be individually configured. Most alarm definitions specify detection thresholds, and detection windows, in order to exclude transient events.

> **Note:** See "Configuring Video/Audio Alarm Threshold" on page 125, and "Configuring Alarm Debouncing" on page 128, for more details on alarms and their configuration.

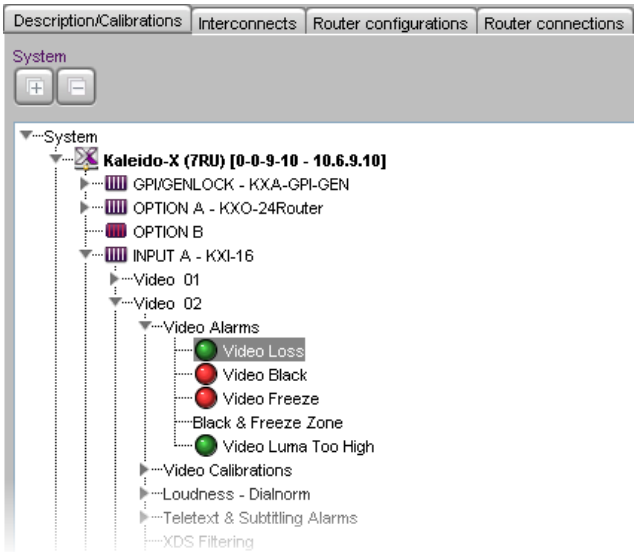
As part of the alarm calibration process, you can specify that the alarm, when triggered, be sent as an SNMP trap.

To choose the traps that will be sent to the selected trap targets for this system:

1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar.

   A hierarchical list representing the current system appears.

2. Expand the multi-viewer whose traps you wish to enable, navigate to the appropriate alarm, and then click the alarm to select it.



3. In the **Properties** tab, select the **Trap enabled** check box to have the multi-viewer issue an SNMP trap each time this alarm is triggered:

4. Click **Apply to all** to apply this setting to *all other alarms with the same name*, throughout the system.

   In the example, clicking **Apply to all** will enable Video Loss SNMP traps for every input in your system.

   > **Note:** This is particularly useful for audio input errors, because of the large number of channels arriving at the multi-viewer.

5. Repeat the procedure until all desired SNMP traps have been enabled.
6. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

7 Creating Logical Sources

This chapter explain how to configure logical sources for your multi-viewer system.

Key Concepts

Term	Description
Logical source	A *logical source* (called a *channel,* in earlier versions of the documentation) refers to a group of physical audio, video, or metadata sources, and text attributes. A logical source can be used as a whole, and assigned to a virtual monitor.
Level	Within a logical source, attributes are organized by *levels* belonging to one five categories: Video, Audio, Text, Alarm, and Time code. For example, the video level category may comprise multiple levels, each representing a specific physical part of a video signal.

Term	Description
Incremental copy	Once a logical source (channel) is configured, it is possible to use incremental copy to automatically propagate appropriate physical assignments to other adjacent logical sources. For instance, if the current logical source's levels are assigned from Video 1, then the incremental copy tool will automatically assign corresponding physical elements from Video 2 to the next logical source's levels, and so on. Alternatively, if only one or a few specific levels are to be similarly configured, it is possible to use incremental copy on the corresponding level column only.
Incremental copy zone	In the sources table, the incremental copy zone is indicated by a small square at the bottom right of the selected cell.

Detailed Directions

Creating and Configuring Logical Sources

When opening XEdit in offline mode, the initial database is populated with the default configuration for a Kaleido-X (7RU) system, including a fully-populated frame (all cards present) and a set of predefined logical sources. The *KX Router* logical router is also created as a 96 × 80 router where the 96 inputs are the multi-viewer's logical sources, the first 48 outputs are those from the two router cards, and the last 32 outputs are monitor wall destinations.

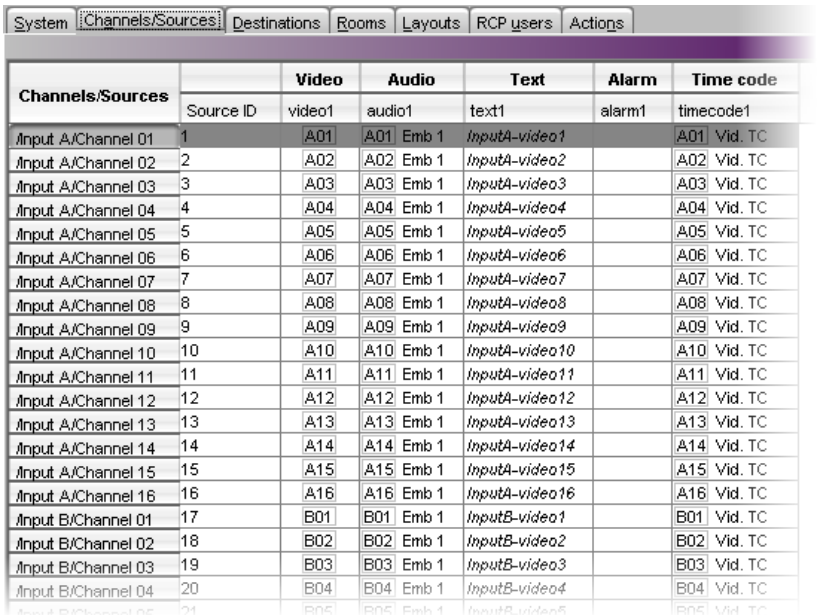
Likewise, when you replace the initial Kaleido-X (7RU) with the appropriate multi-viewer model that matches your actual system, you can choose to have your local database populated with a default set of logical sources and a preconfigured *KX Router* logical router.

Adding a Logical Source

To add a logical source:

1. Click the **Channels/Sources** tab in the main window.

   The sources table appears.

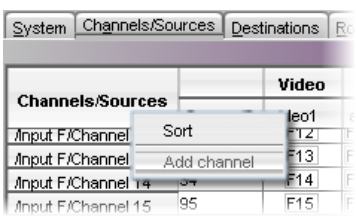


Channels/Sources		Video	Audio	Text	Alarm	Time code
	Source ID	video1	audio1	text1	alarm1	timecode1
/Input A/Channel 01	1	A01	A01 Emb 1	*InputA-video1*		A01 Vid. TC
/Input A/Channel 02	2	A02	A02 Emb 1	*InputA-video2*		A02 Vid. TC
/Input A/Channel 03	3	A03	A03 Emb 1	*InputA-video3*		A03 Vid. TC
/Input A/Channel 04	4	A04	A04 Emb 1	*InputA-video4*		A04 Vid. TC
/Input A/Channel 05	5	A05	A05 Emb 1	*InputA-video5*		A05 Vid. TC
/Input A/Channel 06	6	A06	A06 Emb 1	*InputA-video6*		A06 Vid. TC
/Input A/Channel 07	7	A07	A07 Emb 1	*InputA-video7*		A07 Vid. TC
/Input A/Channel 08	8	A08	A08 Emb 1	*InputA-video8*		A08 Vid. TC
/Input A/Channel 09	9	A09	A09 Emb 1	*InputA-video9*		A09 Vid. TC
/Input A/Channel 10	10	A10	A10 Emb 1	*InputA-video10*		A10 Vid. TC
/Input A/Channel 11	11	A11	A11 Emb 1	*InputA-video11*		A11 Vid. TC
/Input A/Channel 12	12	A12	A12 Emb 1	*InputA-video12*		A12 Vid. TC
/Input A/Channel 13	13	A13	A13 Emb 1	*InputA-video13*		A13 Vid. TC
/Input A/Channel 14	14	A14	A14 Emb 1	*InputA-video14*		A14 Vid. TC
/Input A/Channel 15	15	A15	A15 Emb 1	*InputA-video15*		A15 Vid. TC
/Input A/Channel 16	16	A16	A16 Emb 1	*InputA-video16*		A16 Vid. TC
/Input B/Channel 01	17	B01	B01 Emb 1	*InputB-video1*		B01 Vid. TC
/Input B/Channel 02	18	B02	B02 Emb 1	*InputB-video2*		B02 Vid. TC
/Input B/Channel 03	19	B03	B03 Emb 1	*InputB-video3*		B03 Vid. TC
/Input B/Channel 04	20	B04	B04 Emb 1	*InputB-video4*		B04 Vid. TC

Note: The sources table is preconfigured with a set of default assignments, including at least one level under each level category. A symbol indicates the physical source for each assignment: for example, "A16" indicates input signal 16 on input card A. In the case of an expansion system, the symbol is prefixed with a frame identifier: either "FRA-" or "FRB-". On the Kaleido-X16, only the input numbers 01 to 16 appear. On a KVM-3901/3911, the input number 1 to 8 appear.

2. On the **File** menu, click **New**.

   Alternatively right-click the **Channels/Sources** column heading, and then click **Add channel** on the shortcut menu.



   A logical source is added at the bottom of the sources table.

Note: You can change the logical source name and path. For example, "Input A, Channel 1" can be renamed "Cam 1". You can group related logical sources together, by adding elements to the path, and then sorting the table as needed, to suit your purposes (see "Sorting the Sources Table" on page 140).

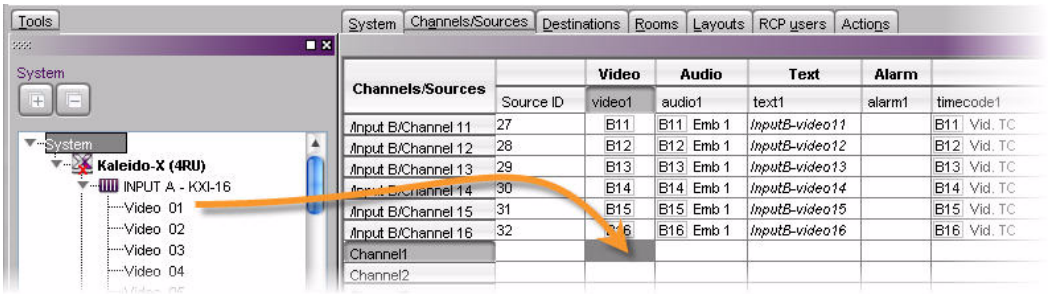
3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The sources table is saved.

Adding Physical Assignments

Once you have created a logical source, you must make the physical assignments. This is required before you can create a layout.

1. In the sources table, click the cell that corresponds to the level you wish to define for this logical source.
2. Expand the filtered System list that appears in the **Tools** pane, and then drag the appropriate element from the list, to the selected level in the sources table.



Sources table with a selected cell in the Video level category for Channel1

3. Repeat the procedure until all desired physical assignments are completed for this logical source.

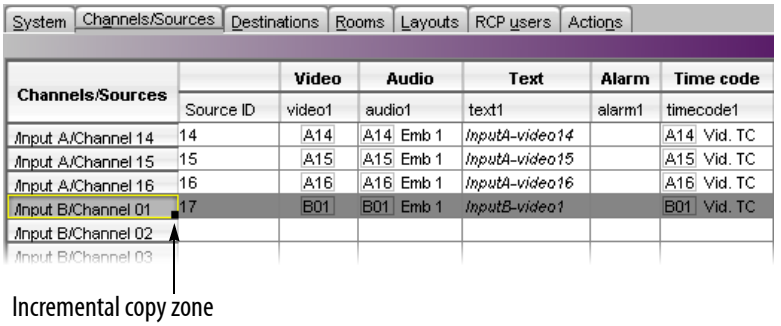
Making Further Assignments by Incremental Copy

Once done with a first logical source, if the next logical source is to be similar to the first one, it is possible to use incremental copy to automatically create it. Alternatively, if only one or a few specific levels are to be similarly configured, it is possible to use incremental copy on the corresponding level column only.

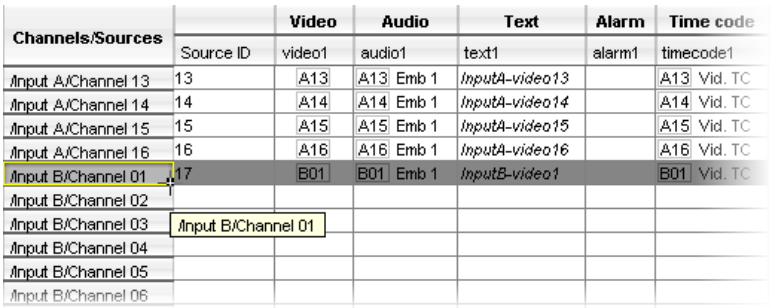
To use the incremental copy tool to propagate physical assignments to adjacent logical sources:

1. Click the row header for the logical source whose assignments you wish to propagate.

   A small square, the *incremental copy zone*, appears in the bottom right corner of the header cell.

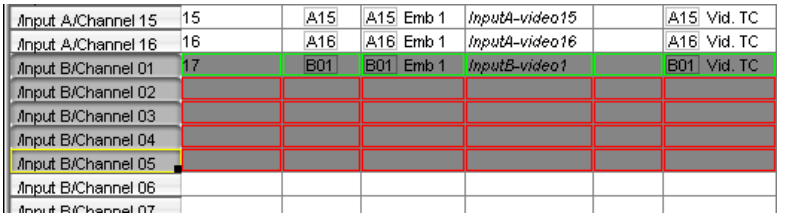


2. Move the pointer to the incremental copy zone. The pointer changes to crosshairs:



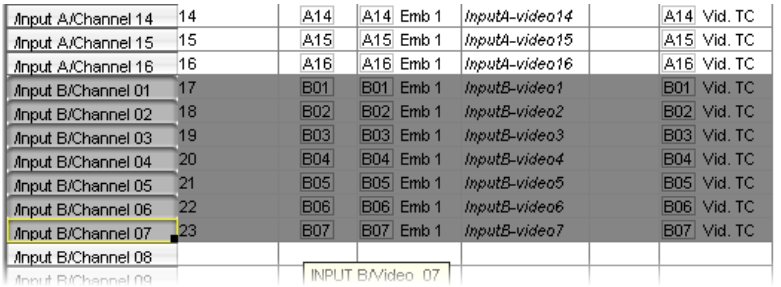
3. Click and drag to propagate the selected logical source's physical assignments to the next logical sources' levels.

   The source cells are highlighted with a green border and the target cells with a red border.



4. Release the mouse button once you have reached the last logical source to be configured.

   The level cells are now populated with "incremented" physical assignments.



> **Note:** It is possible to drag the incremental copy zone up, or down. The physical assignments will be decremented or incremented accordingly.

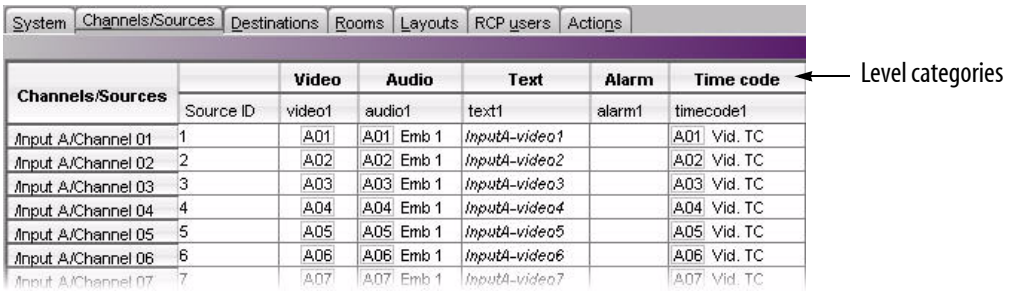
Adding Levels

> **Note:** To be able to monitor a 3D stereoscopic signal, you must first add a second video level to your logical sources (so you have a level for each eye), and then for each video monitor or composite you wish to use for 3D monitoring, you must assign the left-eye and right-eye levels.

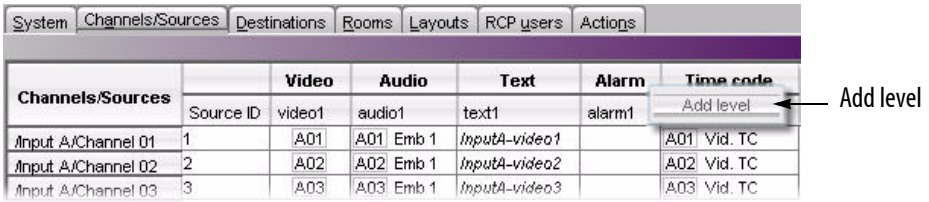
To add a level:

1. Click the **Channels/Sources** tab in the main window.

The level categories appear as the main column headings in the sources table.



2. Right-click the appropriate level category, and then click **Add level** on the shortcut menu.



> **Note:** To change the level name, click the **Properties** tab, and then type the new name in the **Level name** box.

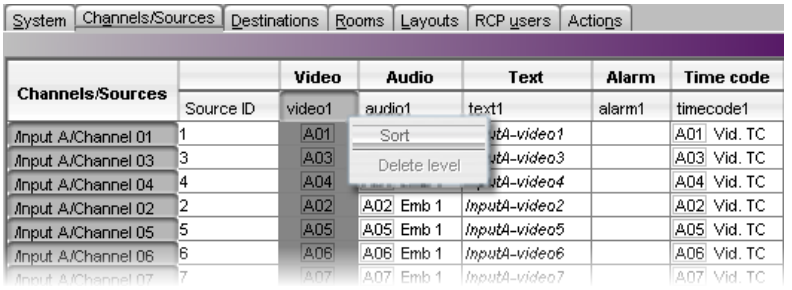
3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The sources table is saved.

Sorting the Sources Table

To sort the sources table:

- Right-click the heading of the column you wish to sort by (i.e. either **Source ID**, or any of the level headings), and then click **Sort** on the shortcut menu.



The sources table is sorted, based on the elements in the selected level.

Resizing the Sources Table's Columns

To resize a column manually:

- In the category or level heading row, point the column boundary you wish to move until the pointer becomes a resize pointer (↔), and then drag the boundary until the column is the desired width.

To resize a column to the width of its content:

- In the category or level heading row, point either boundary for the column you wish to resize to fit, until the pointer becomes a resize pointer (↔), and then double-click.

  The column width is adjusted to fit the content.

To resize all columns to the width of their content:

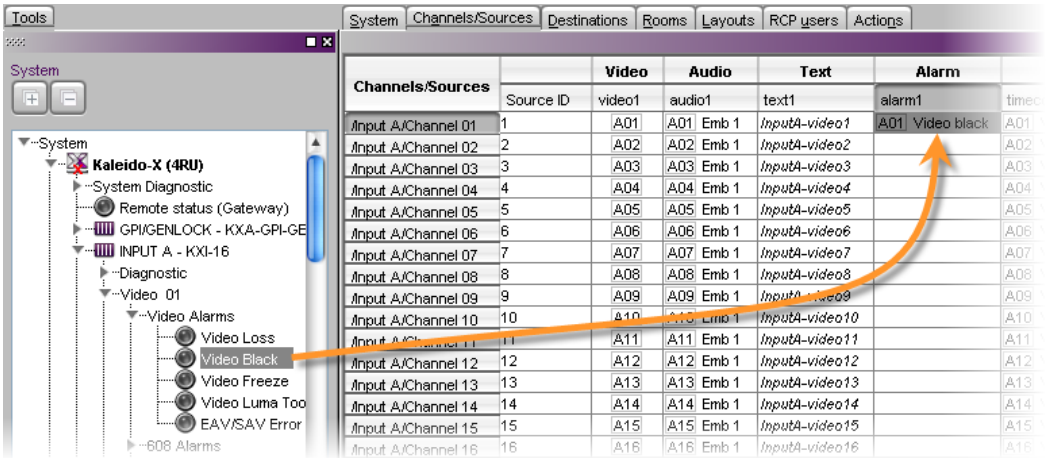
- In the category or level heading row, point any column boundary until the pointer becomes a resize pointer (↔), and then triple-click.

  All columns are resized to fit their content.

Configuring Alarm Levels

To assign an alarm to a logical source's alarm level:

1. Click the **Channels/Sources** tab in the main window.
2. In the sources table, click the cell that corresponds to the logical source and alarm level you wish to configure.
3. Expand the filtered System list in the **Tools** pane, locate the alarm, and drag it onto the selected cell in the sources table.



4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

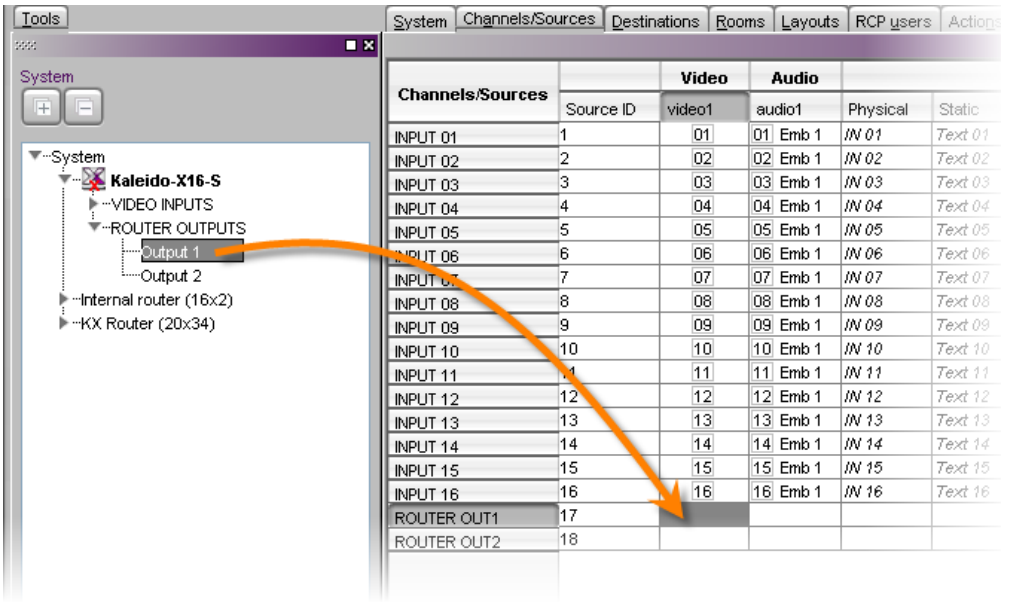
   The sources table is saved.

Monitoring Internal-Router Outputs on the Monitor Wall (Sample Scenario)

It is possible, for specific monitoring purposes, to configure a video monitor so that it displays the current signal at a physical output from the multi-viewer's internal router, by assigning this router output to a logical source's video level.

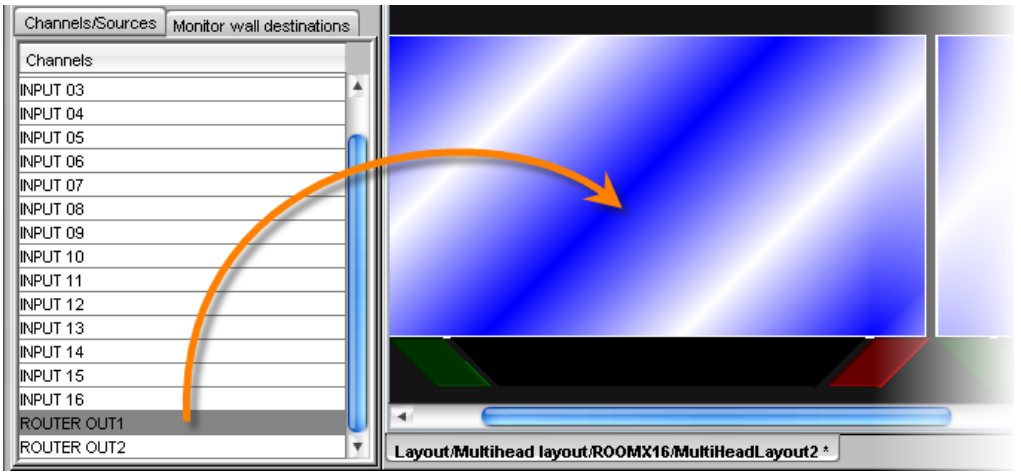
To configure a monitor to follow an internal-router output on the monitor wall:

1. Click the **Channels/Sources** tab in the main window.
2. Add a logical source to the table (see "Adding a Logical Source" on page 136).
3. In the new logical source row, click the cell that corresponds to the first video level.
4. Expand the filtered System list in the **Tools** pane, locate the router output you wish to monitor, and drag it onto the selected cell in the sources table.



5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The sources table is saved.
6. Click the **Layouts** tab, and open the appropriate layout.
7. From the **Channel/Sources** list in the **Tools** pane, drag the new logical source onto the monitor you wish to configure, and then save the layout:



Once such a logical source is available, you can also assign it to other composite or video monitors, directly on the monitor wall, and their video window will dynamically follow the video signal sent to that router output.

> **Note:** The current version of the Kaleido-X Software does not support monitoring of the associated audio signal.

8 Setting Up Rooms

This section describes Kaleido-X rooms and their configuration.

Key Concepts

Term	Description
Room	A room is a visual grouping of displays that represent the physical displays positioned and sized as they are installed in an actual room. Multiple operators can share the same room. The grouping of display creates a large virtual monitor wall that operators see as a single large display. The room definition specifies display resolutions and sizes, as well as zones that are used to display full screen layouts.
Display versus monitor	Within the XEdit workflow, a *display* refers to the representation of a physical display monitor (such as a CRT) within a room, whereas a *monitor* represents a physical signal within a layout: for example, a video monitor displaying a specific video signal.

Term	Description
Full screen zone	A full screen zone is a sub-section of a room. It can be any size and it can be positioned on any of the displays in the room. A full screen zone can be associated with one or more full screen layouts assigned to specific users.
Display library	A display library contains a collection of predefined displays that can be conveniently reused to configure your system's rooms. More than one display library can exist.

Detailed Directions

Managing Rooms

In XEdit, a room represents a grouping of displays on the monitor wall driven by your Kaleido-X system. When creating a room, you add displays, and assign each of them an output head. You can also define full screen zones.

> **Note:** In the case of a cluster system, it is possible to view a room configuration in offline mode. However, to create and configure a room, XEdit must be connected to one of the cluster members (see "Using XEdit Online" on page 69).

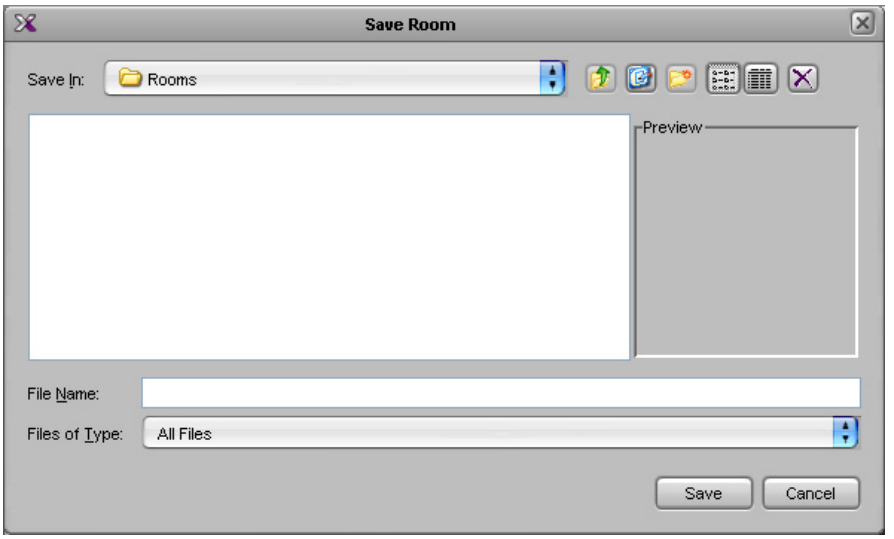
Creating Rooms

To create a room:

1. Click the **Rooms** tab in the main window.
2. On the **File** menu, click **New**.

   An empty room with a black background appears in the main window.
3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The **Save Room** window appears.



4. Type a name for the new room, and then click **Save**.

Notes

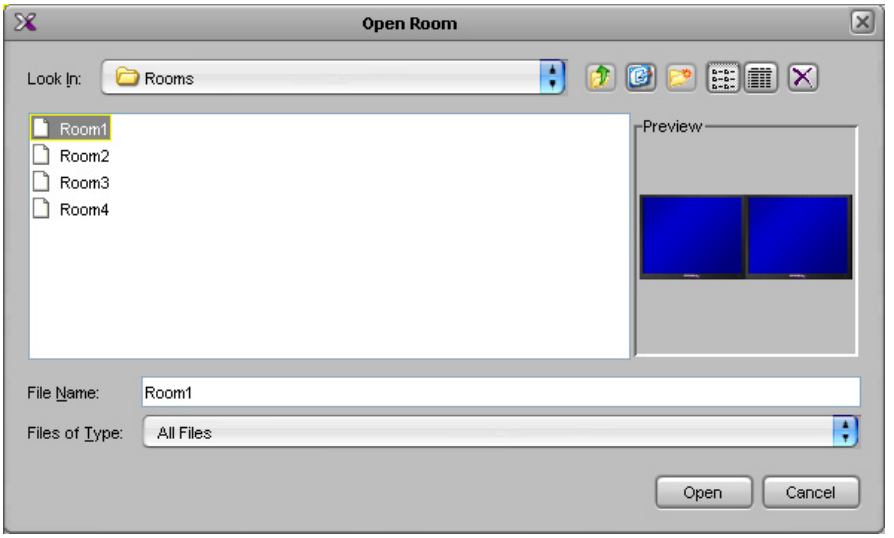
- A room name cannot exceed 7 characters.
- In a cluster system, each room must have a unique name across the whole system. XEdit will not let you use a name if there is already a room with this name associated with one of the multi-viewers within the cluster.
- In a cluster system, if one of the member multi-viewers becomes unavailable while you were configuring a room, then XEdit will not let you save the room. If you wish to save the room anyway, first remove any unavailable multi-viewer from the cluster.

Opening a Room

To open an existing room:

1. Click the **Rooms** tab in the main window.
2. On the **File** menu, click **Open**.

   The **Open Room** window appears:



3. Select the room you wish to open, and then click **Open**.

   The selected room appears in the **Rooms** tab.

> **Note:** In the case of a cluster system, it is possible to view a room configuration in offline mode, but any changes must be made in online mode.

Closing a Room

To close a room:

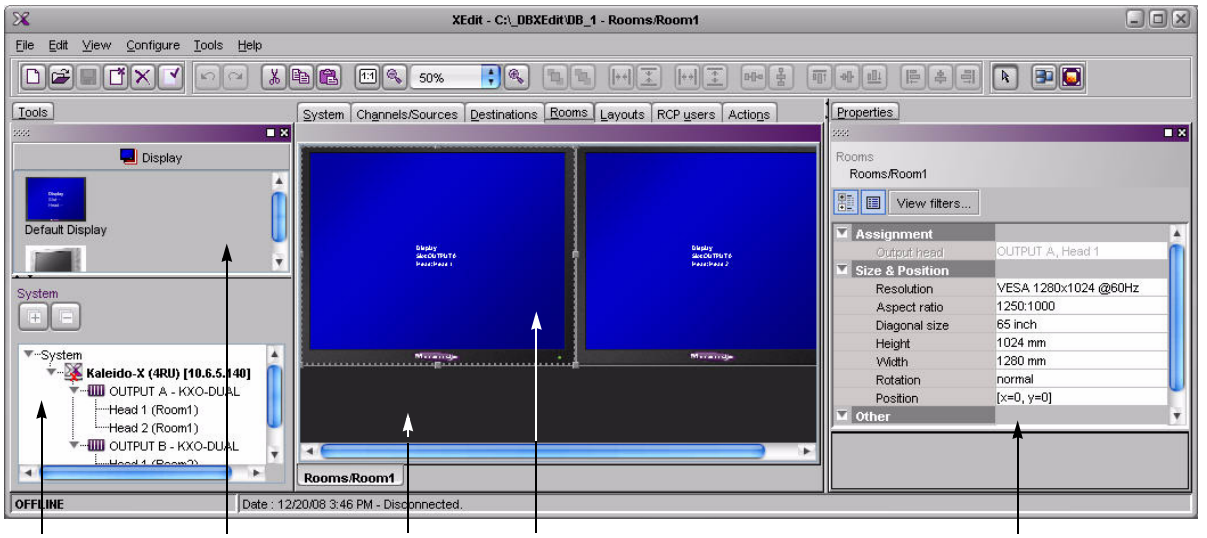
- On the **File** menu, click **Close**. Alternatively, click the Close button on the toolbar.

Adding Displays

To add a display to a room:

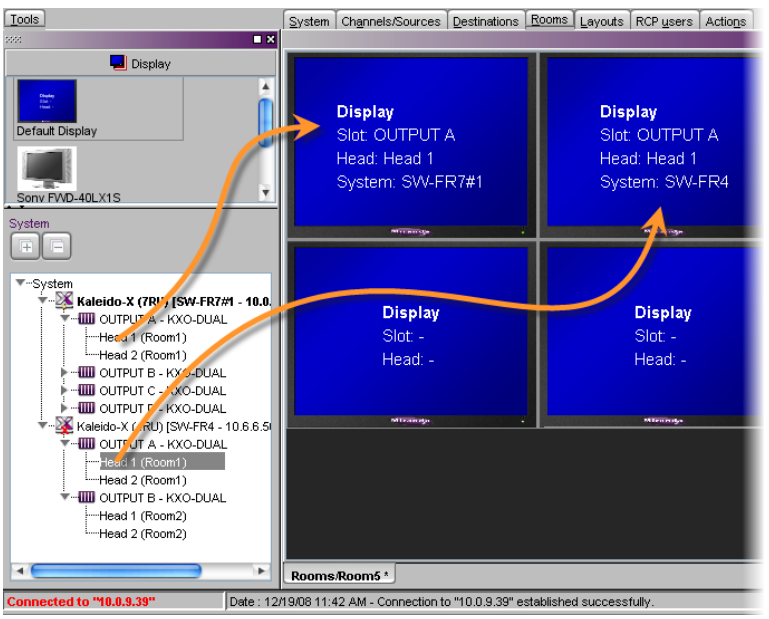
1. Select a display from the display library and drag it onto the room area.

   Alternatively, click the Display button on the toolbar, and then click the room area to add a custom display.

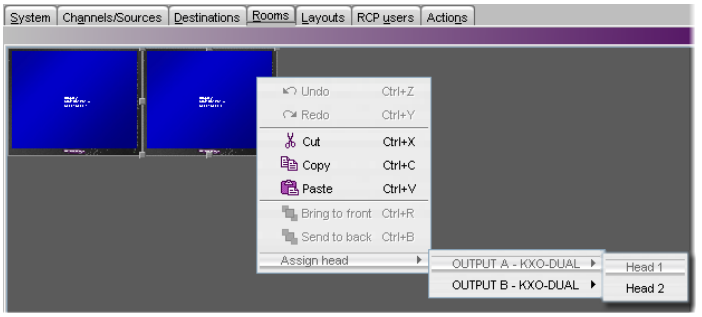


Note: All currently open display libraries appear on the **Tools** pane. Custom display libraries are stored separately from the XEdit workspace. See "Managing Display Libraries" on page 166 for details.

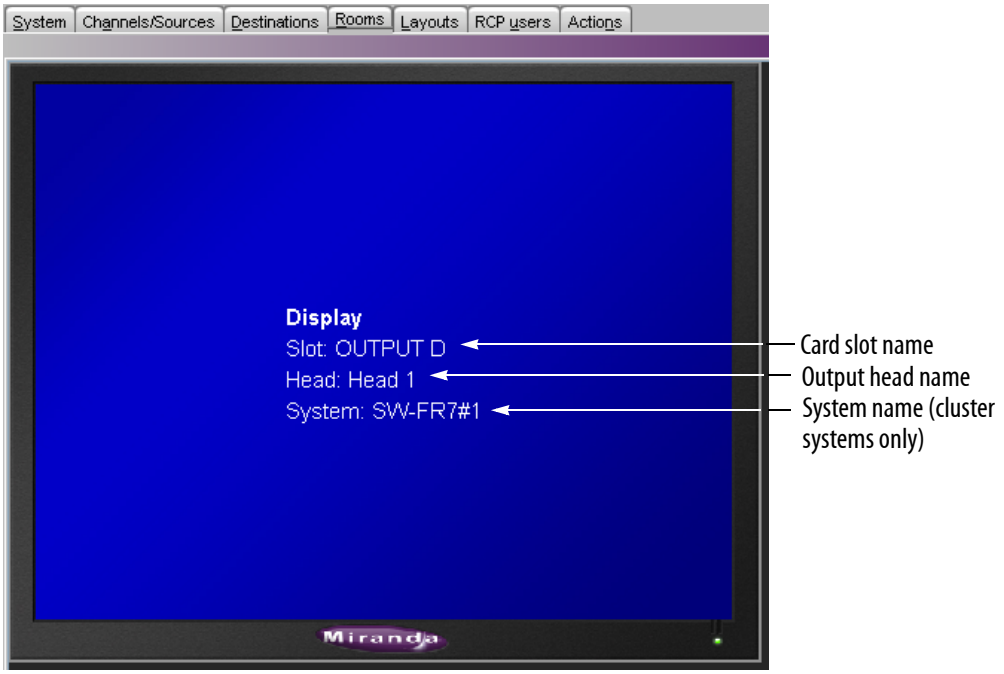
2. Expand the filtered System list in the **Tools** pane, and then drag the appropriate output head onto a display in the **Rooms** tab.



Alternatively, right-click the display, point to **Assign head**, navigate to the appropriate output card, and then click the output head you wish to assign to this display:

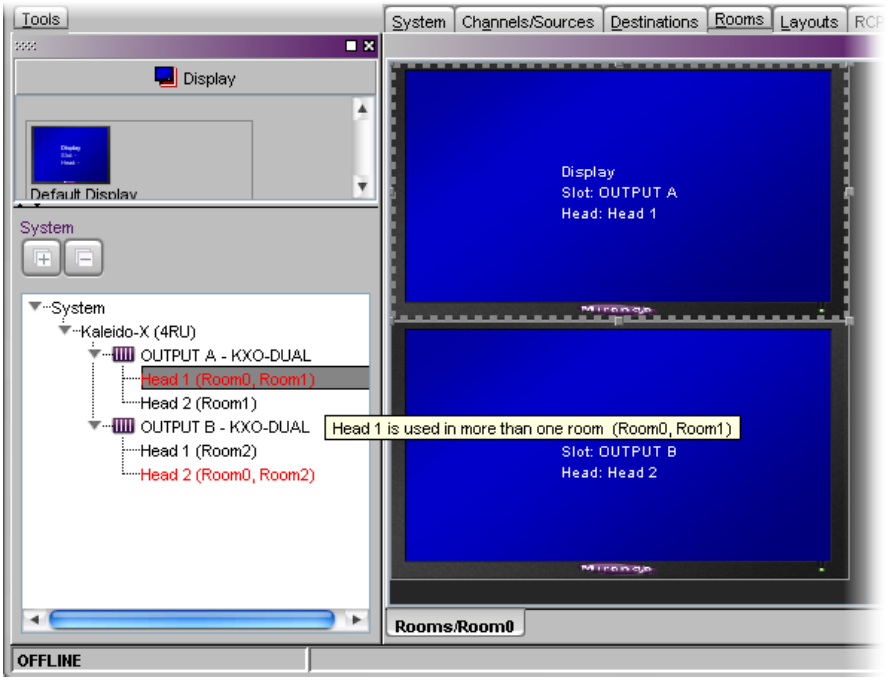


The name of the output head is indicated on the display. In the case of a Kaleido-X (4RU) or Kaleido-X (7RU), the card slot is also indicated. In the case of a cluster system, the name of the originating multi-viewer also appears:



A room can only be saved once every display has been assigned an output head.

One output head cannot be assigned to more than one display at a time. When different displays are assigned the same output head, if the displays are part of the same room, then XEdit will issue an error message and prevent you from saving the room until the head assignment is corrected. However, to facilitate room management, XEdit will let you assign the same head to displays that are located in different rooms, but such conflicting assignments will be marked in red in the filtered System list displayed in the **Tools** pane, and should be resolved by removing a conflicting display, or by deleting the conflicting room:



Note: In a cluster system where rooms and layouts have been created based on configurations from earlier standalone systems, the dashboard may show the wrong room name (from one of the earlier standalone configurations). To prevent this from happening, open the old room configuration, and look for red *Head* elements in the filtered System list that appears at the bottom of the **Tools** pane. Clear the unwanted head assignments, either by removing the corresponding displays from the room layout, or by completely deleting the old room configuration if you do not need it anymore.

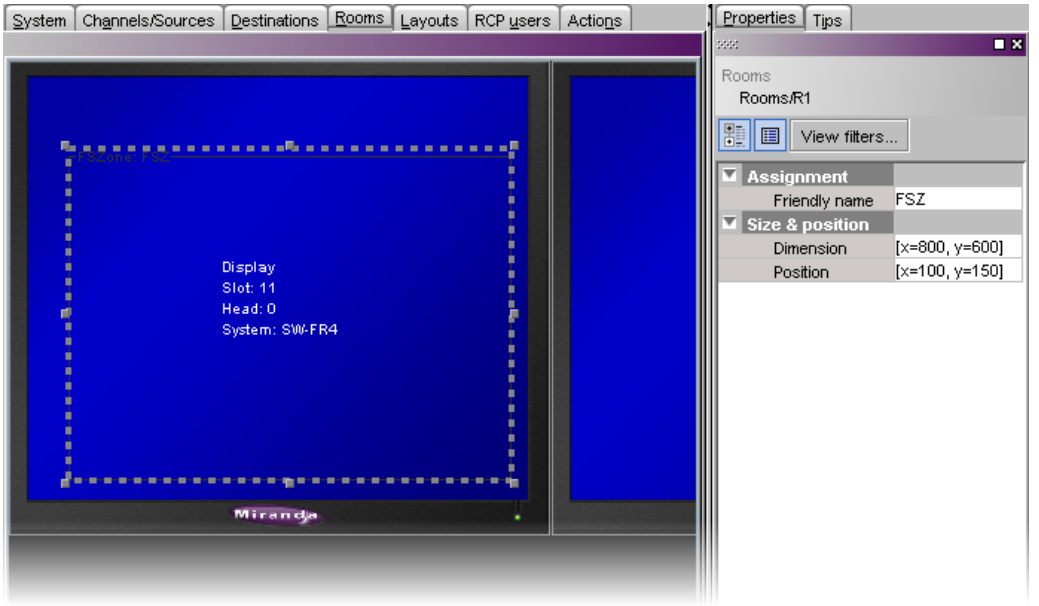
Adding Full Screen Zones

Notes

- Adding full screen zones to a room is optional.
- Do not span a full screen zone across more than one display; use spanned video monitors instead. See “Spanning” on page 178 for more information.

To add a full screen zone to a room:

1. Click the Full screen zone button on the toolbar, and then click the room area to create the full screen zone.
2. Position and resize the zone as appropriate.
3. In the **Properties** tab, click the **Friendly name** box, and then type a name for the zone:



Configuring Displays

The monitor wall driven by your Kaleido-X system may include displays of various shapes and sizes, each with its specific characteristics. The displays you add to your rooms in XEdit must be configured to match the attributes of their physical counterparts. The Kaleido-X Software includes a set of predefined resolutions that cover most standard displays. Any custom resolutions you add to this set will be available throughout the system, and can be reused when configuring any display in any room.

> **Note:** In the case of cluster systems, custom resolutions must be replicated from one multi-viewer to the others manually. See "Replicating Custom Resolutions Across a Cluster System" on page 83.

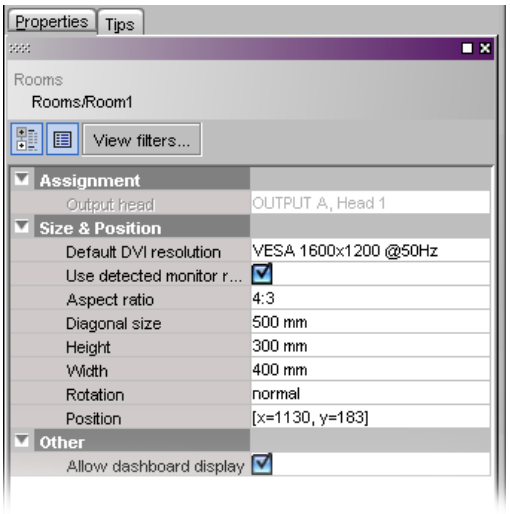
You can manually configure display resolutions in two ways: either globally, from the **Tools** menu, or by clicking a specific display in a room.

In addition to monitor wall displays, your system can include other monitors connected to the multi-viewer's HD-SDI outputs (one for each output head, available with the *SDI monitoring output* option). The HD-SDI output format on a given head depends on the resolution configured for the corresponding multi-viewer output, and, in the case of a 1080-line resolution, on the selected scan format (interlaced, progressive) for this output head.

Viewing Room Display Properties

To view the properties for one of the display in a room:

1. Click the display whose properties you wish to view.
2. Review the attributes and values that appear in the **Properties** pane:



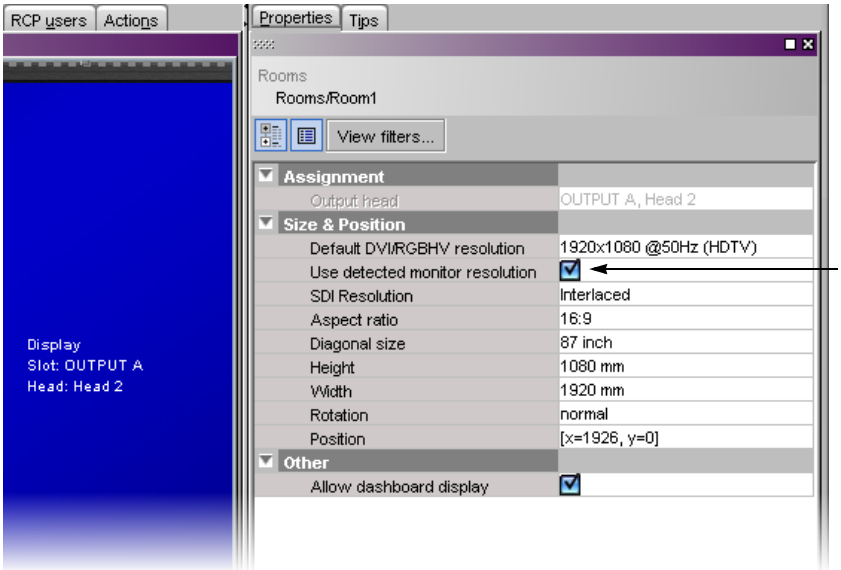
Display properties

Enabling EDID Auto-Detection in XEdit

> **Note:** The monitor EDID Auto-detect feature is enabled by default in order to facilitate the initial setup of a Kaleido-X system. To avoid problems, Miranda recommends that you disable the auto-detect feature once the initial setup is completed. If you later wish to replace one of the displays, re-enable the auto-detect feature beforehand (remember to disable it once the new display is up and running).

To enable EDID auto-detection for a display:

1. In the Rooms tab, click the display you wish to configure.
2. Select the **Use detected monitor resolution** check box:

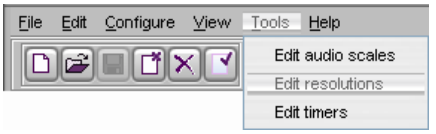


3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

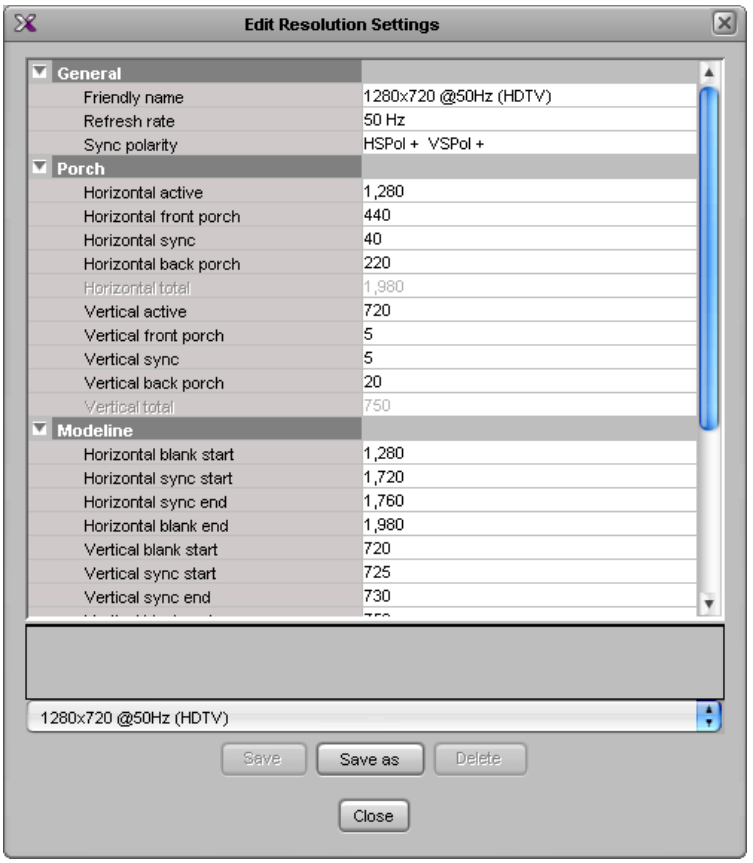
Configuring Custom Resolutions from the Tools Menu

To create a custom display resolution from the Tools menu:

1. On the **Tools** menu, click **Edit resolutions**:



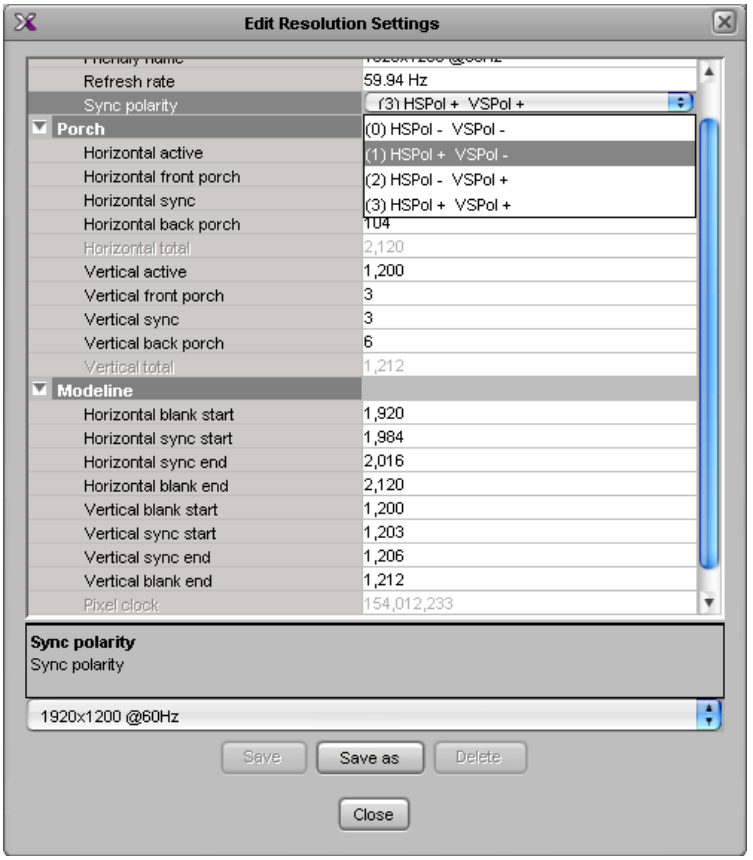
The **Edit Resolution Settings** window appears:



2. Select the resolution you wish to customize (or the one on which you wish to base a new resolution), from the list at the bottom of the window.

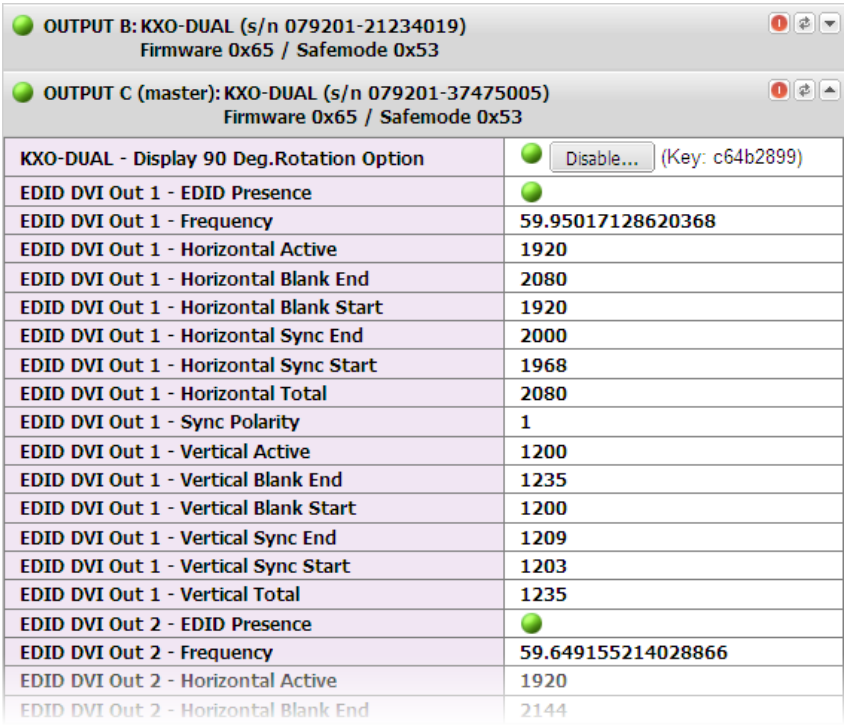
> **Note:** When you modify one of the default resolutions, you can only save your changes as a new resolution. On the other hand, custom resolutions can be tweaked and saved repeatedly until the desired configuration is achieved. However, make sure that the active width and active height values you specify match those of one of the default resolutions, otherwise your custom resolution will be ignored.

3. Under either the **Porch** or the **Modeline** section—depending on whether you prefer to specify front porch, back porch, sync, and active values, or blank start, sync start, sync end and blank end—, set the refresh rate and other timing parameters so that they match those of the physical display you need to configure:



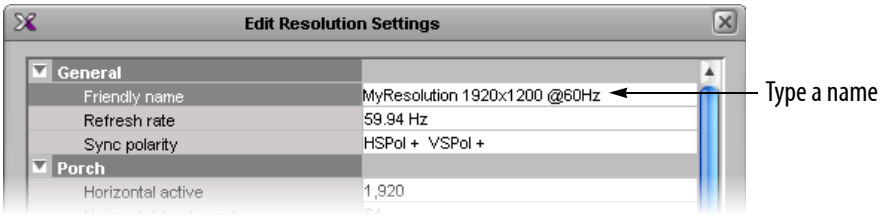
Note: In XAdmin's **Status and Options** page, these parameters are listed under the corresponding output card information, according to the blank/sync start/end modeline system, and with the sync polarity expressed as a number between 0 and 3. Refer to "Viewing a Multi-Viewer's Status Information" on page 386 for details.

Example: Suppose you want to configure the display that is connected to the OUTPUT C (master) KXO-DUAL card's head 1. The image below shows the relevant data you need to copy to the **Modeline** section of the **Edit Resolution Settings** window:


OUTPUT B: KXO-DUAL (s/n 079201-21234019)
Firmware 0x65 / Safemode 0x53
OUTPUT C (master): KXO-DUAL (s/n 079201-37475005)
Firmware 0x65 / Safemode 0x53
KXO-DUAL - Display 90 Deg.Rotation Option
Disable...
(Key: c64b2899)
EDID DVI Out 1 - EDID Presence
EDID DVI Out 1 - Frequency
59.95017128620368
EDID DVI Out 1 - Horizontal Active
1920
EDID DVI Out 1 - Horizontal Blank End
2080
EDID DVI Out 1 - Horizontal Blank Start
1920
EDID DVI Out 1 - Horizontal Sync End
2000
EDID DVI Out 1 - Horizontal Sync Start
1968
EDID DVI Out 1 - Horizontal Total
2080
EDID DVI Out 1 - Sync Polarity
1
EDID DVI Out 1 - Vertical Active
1200
EDID DVI Out 1 - Vertical Blank End
1235
EDID DVI Out 1 - Vertical Blank Start
1200
EDID DVI Out 1 - Vertical Sync End
1209
EDID DVI Out 1 - Vertical Sync Start
1203
EDID DVI Out 1 - Vertical Total
1235
EDID DVI Out 2 - EDID Presence
EDID DVI Out 2 - Frequency
59.649155214028866
EDID DVI Out 2 - Horizontal Active
1920
EDID DVI Out 2 - Horizontal Blank End
2144

Frequency and timing information, as listed in XAdmin

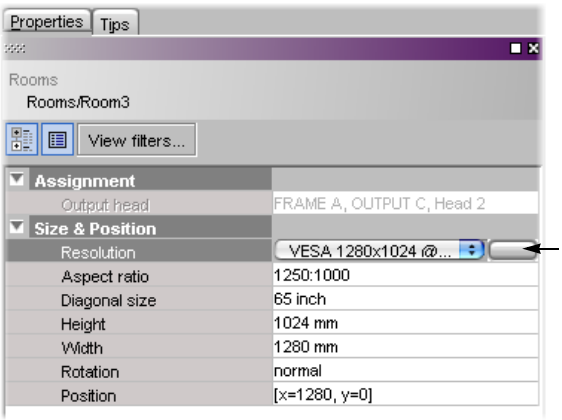
4. Type a name for the new resolution in the **Friendly name** box, and then click **Save as** to close the **Edit Resolution Settings** window. Alternatively, if you are modifying an existing custom resolution, you can click the **Save** button:



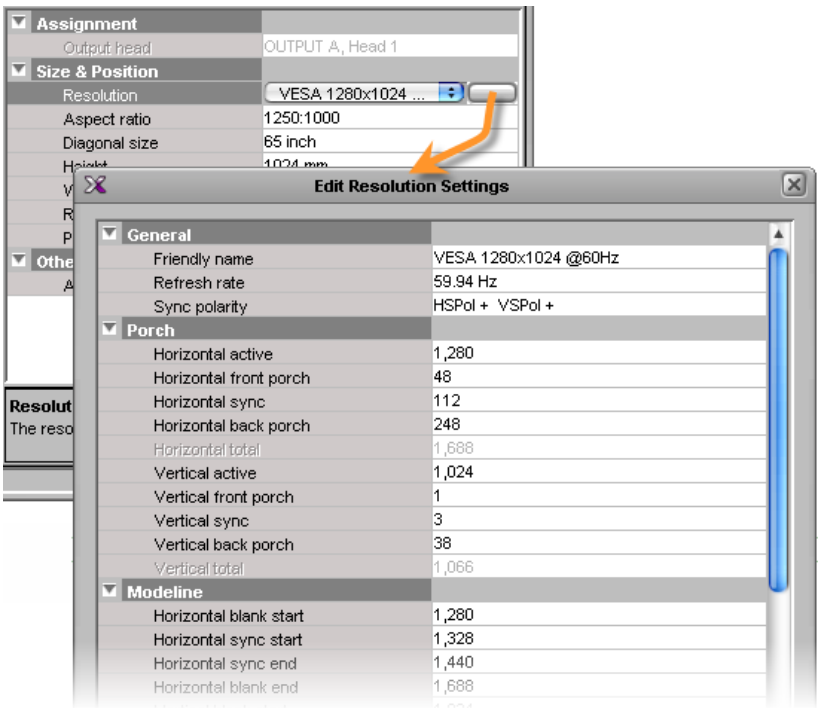
Configuring a Custom Resolution from a Specific Display in a Room

To configure a custom resolution from a specific display in a room:

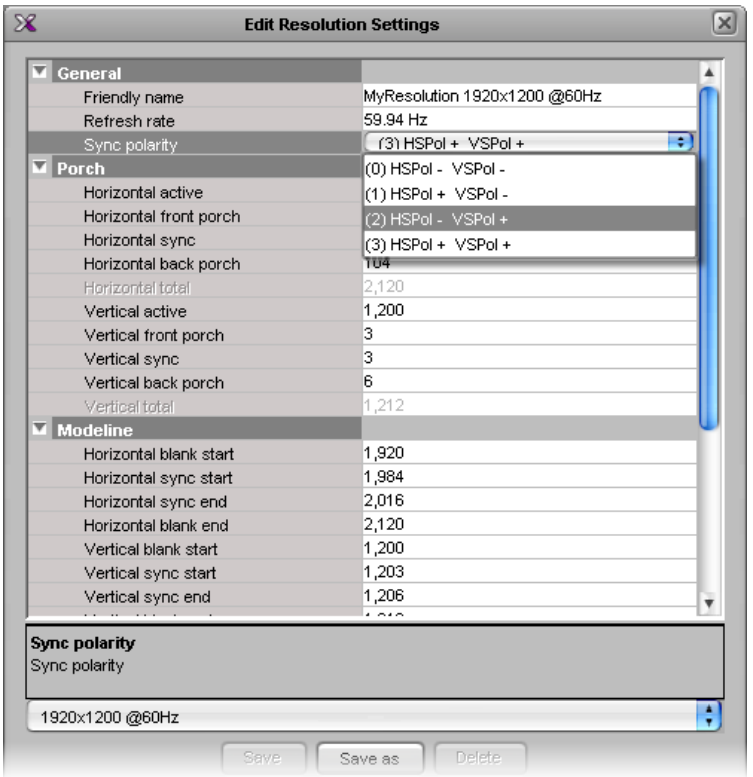
1. Click the display whose properties you wish to configure.
2. Click the **Resolution** box in the **Properties** pane, and then click the button that appeared on the right of the resolution presets:



The **Edit Resolution Settings** window appears:



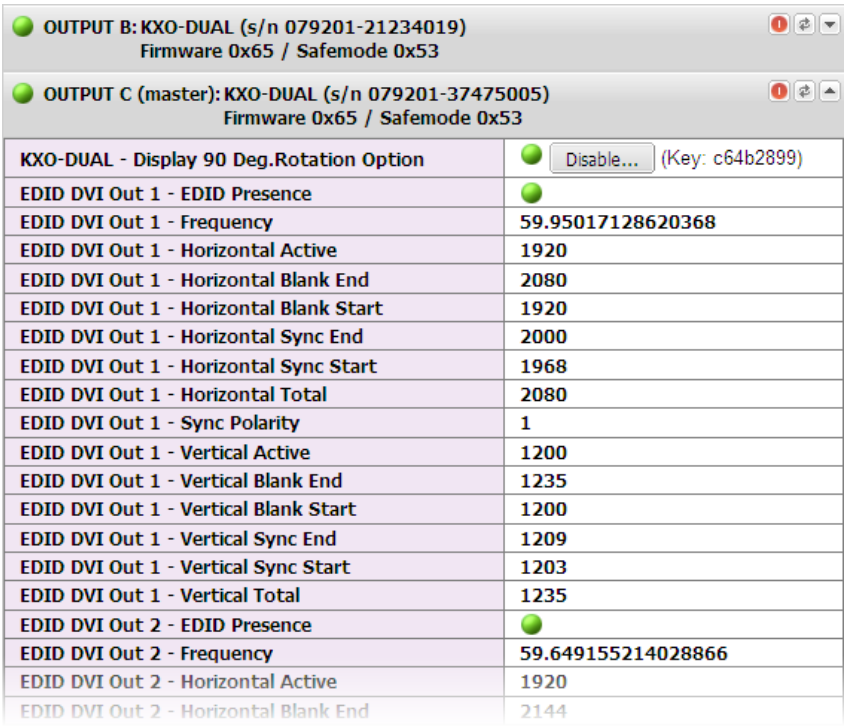
3. Under either the **Porch** or the **Modeline** section—depending on whether you prefer to specify front porch, back porch, sync, and active values, or blank start, sync start, sync end and blank end—, set the refresh rate and other timing parameters so that they match those of the physical display you need to configure:



Edit Resolution Settings window (showing timing parameters)

> **Note:** In XAdmin's **Status and Options** page, these parameters are listed under the corresponding output card information, according to the blank/sync start/end modeline system, and with the sync polarity expressed as a number between 0 and 3. Refer to "Viewing a Multi-Viewer's Status Information" on page 386 for details.

Example: Suppose you want to configure the display that is connected to the OUTPUT C (master) KXO-DUAL card's head 1. The image below shows the relevant data you need to copy to the **Edit Resolution Settings** window:



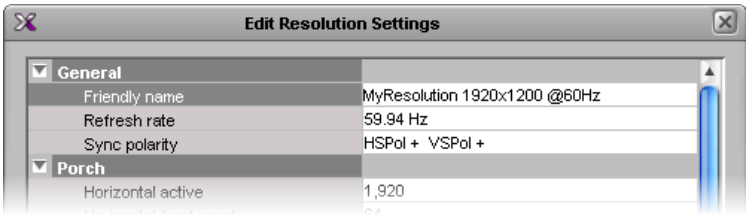
OUTPUT B: KXO-DUAL (s/n 079201-21234019)
Firmware 0x65 / Safemode 0x53

OUTPUT C (master): KXO-DUAL (s/n 079201-37475005)
Firmware 0x65 / Safemode 0x53

KXO-DUAL - Display 90 Deg.Rotation Option	Disable... (Key: c64b2899)
EDID DVI Out 1 - EDID Presence	
EDID DVI Out 1 - Frequency	59.95017128620368
EDID DVI Out 1 - Horizontal Active	1920
EDID DVI Out 1 - Horizontal Blank End	2080
EDID DVI Out 1 - Horizontal Blank Start	1920
EDID DVI Out 1 - Horizontal Sync End	2000
EDID DVI Out 1 - Horizontal Sync Start	1968
EDID DVI Out 1 - Horizontal Total	2080
EDID DVI Out 1 - Sync Polarity	1
EDID DVI Out 1 - Vertical Active	1200
EDID DVI Out 1 - Vertical Blank End	1235
EDID DVI Out 1 - Vertical Blank Start	1200
EDID DVI Out 1 - Vertical Sync End	1209
EDID DVI Out 1 - Vertical Sync Start	1203
EDID DVI Out 1 - Vertical Total	1235
EDID DVI Out 2 - EDID Presence	
EDID DVI Out 2 - Frequency	59.649155214028866
EDID DVI Out 2 - Horizontal Active	1920
EDID DVI Out 2 - Horizontal Blank End	2144

Frequency and timing information, as listed in XAdmin

4. Type a name for the new resolution in the **Friendly name** box, and then click **Save as** to close the **Edit Resolution Settings** window. Alternatively, if you are modifying an existing custom resolution, you can click the **Save** button:



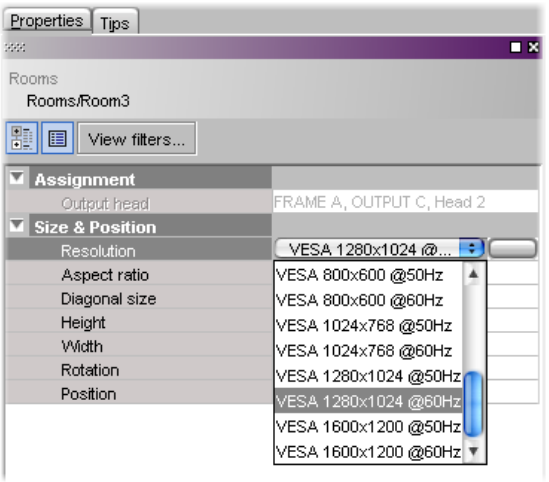
5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing Room Display Resolutions

To change the resolution for a display in a room:

1. Click the display you wish to configure.
2. Click the **Resolution** box in the **Properties** pane.

   The resolution presets appears:



Resolution presets

3. Select the appropriate resolution from the list.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Configuring the HD-SDI Monitoring Output Format

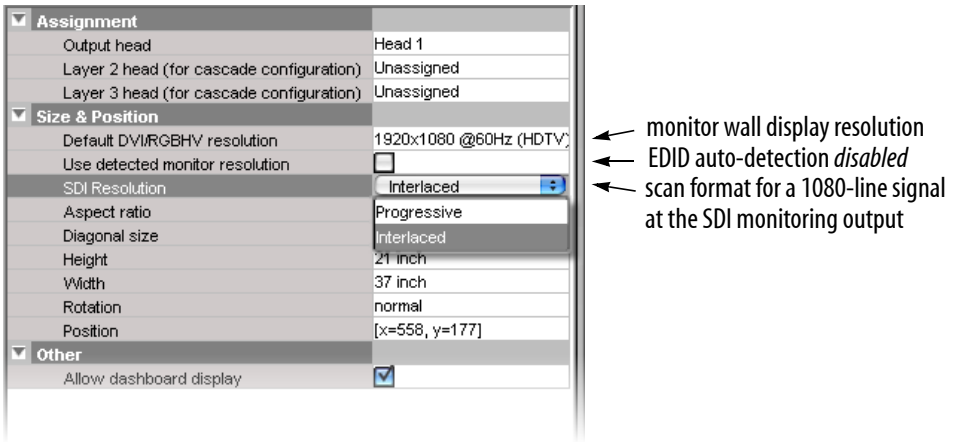
The HD-SDI output format on a given head depends on the resolution configured for the corresponding multi-viewer output (see "Changing Room Display Resolutions" on page 160), and, in the case of a 1080-line resolution, on the selected scan format (interlaced, progressive) for this output head. In addition, EDID auto-detection must be *disabled* (see "Enabling EDID Auto-Detection in XEdit" on page 153). The following multi-viewer output resolutions are supported: 1920 × 1080 (for an HD-SDI output in the 1080i or 1080p format) and 1280 × 720 (for an HD-SDI output in the 720p format). Any other DVI/RGBHV resolution will result in the HD-SDI output being disabled.

Multi-viewer output resolution	HD-SDI output (interlaced)	HD-SDI output (progressive)
1280 × 720 50Hz	No output	720p 50Hz
1280 × 720 59.94Hz	No output	720p 59.94Hz
1920 × 1080 50Hz	1080i 50Hz	1080p 50Hz
1920 × 1080 59.94Hz	1080i 59.94Hz	1080p 59.94Hz
Any other HDMI resolutions	No output	No output

To configure the scan format for a 1080-line signal at the SDI monitoring output:

1. In the Room area, click the display associated with the multi-viewer output head whose properties you wish to configure.

2. In the **Properties** pane, verify that the selected default resolution configured for the monitor wall display is compatible with the desired format at the SDI output for this head (see table above), and make sure that the **Use detected monitor resolution** option is disabled.
3. Click the **SDI Resolution** box, and then select the appropriate scan format: **Progressive**, or **Interlaced**.



4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing a Display's Aspect Ratio

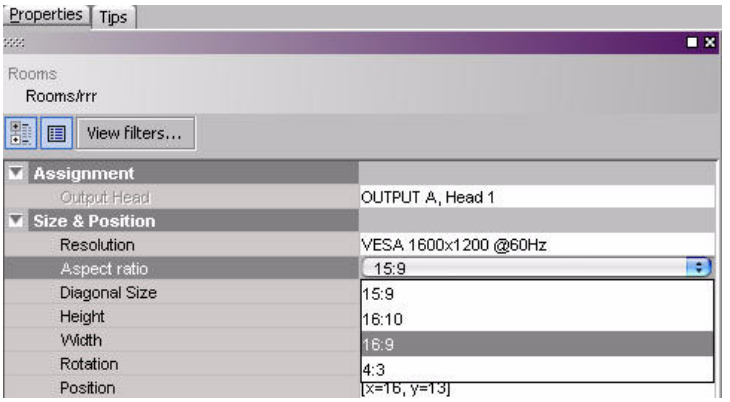
Notes

- It is important to properly set the aspect ratio of a display, since this will affect the proportions of every component you will use to create layouts for this room. For instance, if the aspect ratio of a display does not match the aspect ratio of the actual display in the physical room, then a video window inside a layout will show distorted images.
- If you change the display aspect ratio later in the process, layouts created before the change will be broken.

To change the aspect ratio of a display in a room:

1. Click the display whose properties you wish to configure.
2. Click the **Aspect ratio** box, in the **Properties** pane.

   The aspect ratio presets appear:



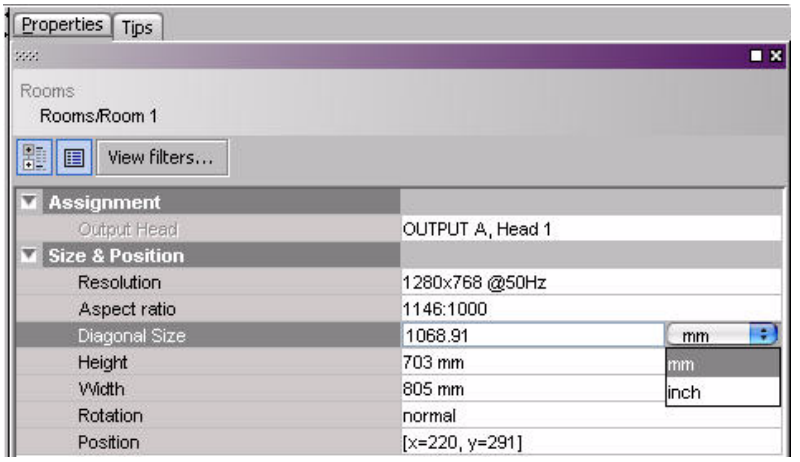
Aspect ratio presets

3. Select the appropriate aspect ratio from the list. Alternatively, type the desired ratio directly in the box.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing a Display's Diagonal Size

To change the diagonal size of a display in a room:

1. Click the display whose properties you wish to configure.
2. Click the **Diagonal size** box in the **Properties** pane:



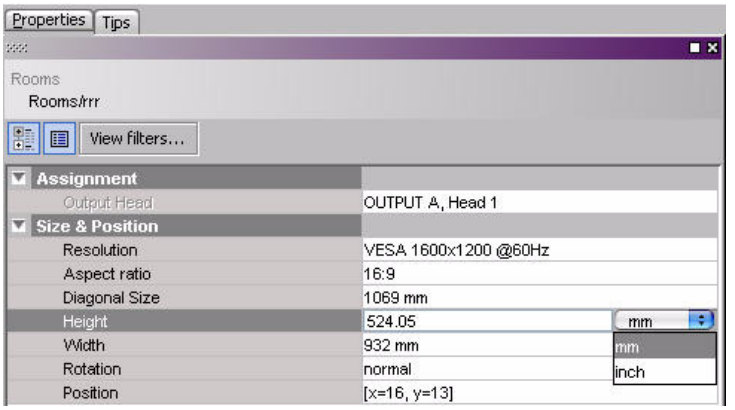
Diagonal size

3. Select the appropriate unit of measurement from the list that appears inside the **Diagonal size** box, and type the size.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing a Display's Height

To change the height of a display in a room:

1. Click the display whose properties you wish to configure.
2. Click the **Height** box in the **Properties** pane:



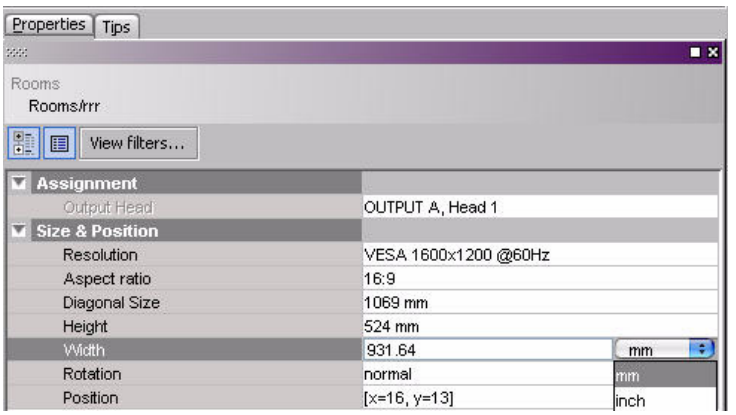
Height property

3. Select the appropriate unit of measurement from the list that appears inside the **Height** box and type the height.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing a Display's Width

To change the width of a display in a room:

1. Click the display whose properties you wish to configure.
2. Click the **Width** box in the **Properties** pane:



Width property

3. Select the appropriate unit of measurement from the list that appears inside the **Width** box and type the width.

Changing a Display's Rotation

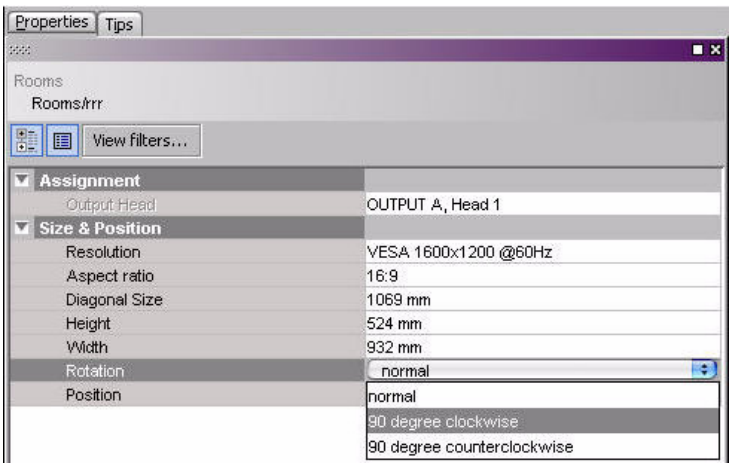
Notes

- The current version of the KMV-3901/3911 multi-viewer does not support display rotation.
- The *Display Rotation* option must be enabled on the corresponding output card (in the case of a Kaleido-X multi-viewer) or HDMI output port (in the case of a Kaleido-X16) for rotation to work properly on the monitor wall. The option can be enabled and verified in XAdmin's **Status and Options** page (see "Enabling Options" on page 371).

To change the rotation setting for a display in a room:

1. Click the display whose properties you wish to configure.
2. Click the **Rotation** box in the **Properties** pane.

   The Rotation presets appear:



Display rotation presets

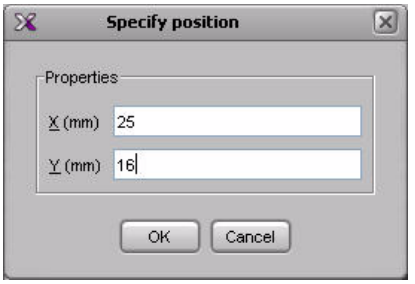
3. Select the **Rotation** setting that matches the way the actual display is mounted in the physical room.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Changing a Display's Position

To change position of a display in a room:

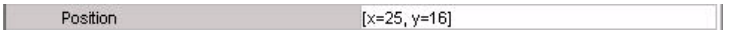
1. Click the display whose properties you wish to configure.
2. Click the **Position** box in the **Properties** pane, then click the button that appears inside the box.

   The **Specify Position** window appears:



3. Type the appropriate values in the **X (mm)**, and **Y (mm)** boxes.
4. Click **OK**.

   The values appear in the **Position** box:



Display position values

5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

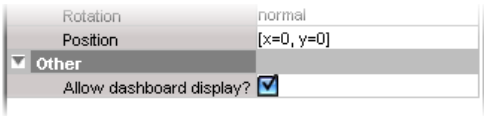
Disabling the Dashboard

A room can be configured to prevent the dashboard from appearing on specific displays. For instance, in a production control room, or if the Kaleido-X is used in the studio backdrop you may not want the dashboard to pop up, regardless of any alarm condition.

> **Note:** Make sure the dashboard remains enabled on a least one display, in a room where alarm conditions can be monitored, since it is your only way to be notified in case of a card booting in offline mode, a duplicate IP address, a defective fan, a power supply alarm, etc.

To disable the dashboard for a specific display:

- Click the display on which you do not want the dashboard to appear, and then clear the **Allow dashboard display** check box in the **Properties** pane:



Managing Display Libraries

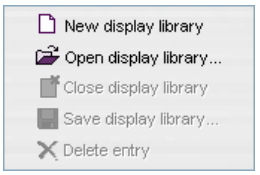
The default display library includes configurations for the most popular display models. You can also create your own display configurations, and add them to custom display libraries. All open display libraries appear on the **Tools** pane. The default display library is always open. Custom display libraries are stored separately from the XEdit workspace, and must be opened explicitly.

Creating Custom Display Libraries

To create a custom display library:

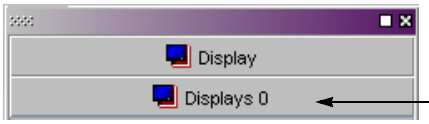
1. Click the **Rooms** tab in the main window.
2. On the **File** menu, click **New**. Alternatively, click **Open** to open an existing room.
3. On the **File** menu, click **New display library**.

   Alternatively, right-click anywhere inside the **Tools** pane's display library area, and then click **New display library** on the shortcut menu:



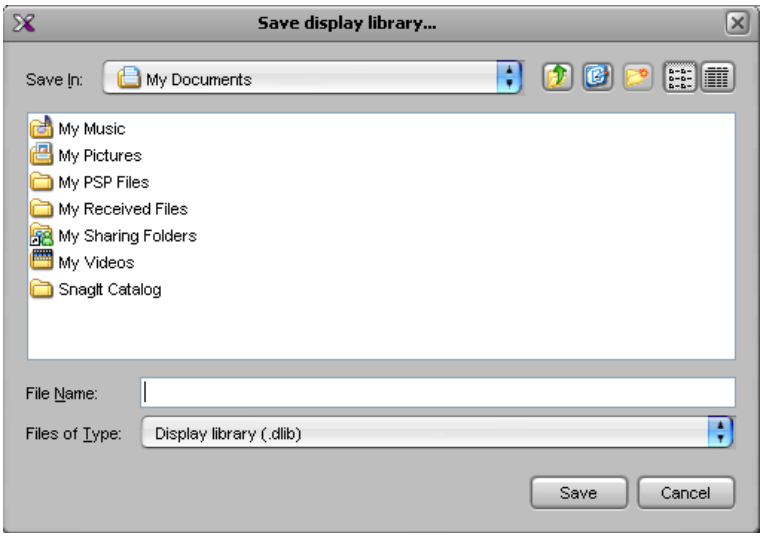
Display library shortcut menu

   The new display library appears below the default display library area in the **Tools** pane:



4. Right-click anywhere in the display library area, and then click **Save Display Library** on the shortcut menu.

   The **Save Display Library** window appears:



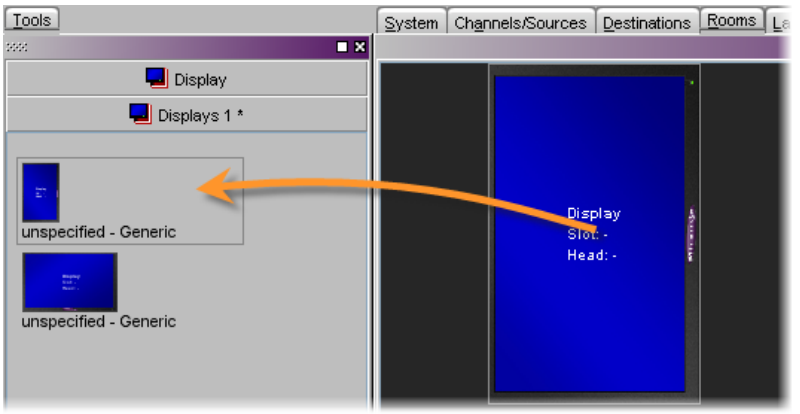
5. Type a name for the new custom display library, and then click **Save**.

   Custom display libraries are stored separately from the XEdit workspace. They have a `.dlib` extension.

Adding Displays to Custom Libraries

To add a display to a custom display library:

1. Click the Display button on the toolbar, and then click the room background to add a display. Alternatively drag a display from a display library onto the room, or choose a display within an existing room.
2. Customize the display as needed, and then drag it onto the display library *while holding the Ctrl key*:



Ctrl+click to drag display to custom library

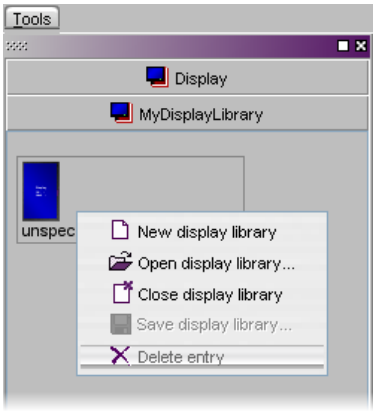
> **Note:** It is not possible to further customize a display once it is inside a library. Should you need to do so, drag the display to the room area, apply the required changes, and then Ctrl+drag the modified display to the display library. You can then remove the obsolete display from the library.

Removing Displays From Custom Libraries

To remove a display from a custom library:

- Click the display you wish to remove and then press Delete.

  Alternatively, right-click its icon and then click **Delete entry** on the shortcut menu:

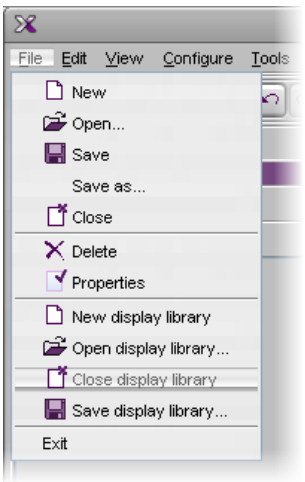


Closing Display Libraries

To close a display library:

- Once the custom library is saved, you can right-click in the library area, and then click **Close display library** on the shortcut menu.

  Alternatively, click **Close display library**, on the **File** menu:



Opening Display Libraries

To open a custom display library:

- In the **Tools** pane, right-click anywhere in the display library area, and then click **Open display library** on the shortcut menu. Alternatively, click **Open display library**, on the **File** menu.

> **Note:** It is possible to have multiple custom libraries open at the same time.

9 Creating Layouts

This section describes Kaleido-X layout elements and their purposes, and provides detailed configuration instructions.

Key Concepts

Term	Description
Layout	A *layout* is a visual grouping of monitors that appear on displays within a room. A layout includes different types of monitors in a variety of placements and sizes. There are two types of layouts: room layouts and full screen layouts.
Monitor	A *monitor* (also called *widget*) is a graphical element that is part of a layout. XEdit supports several types of primitive layout elements (e.g. clocks, video monitors, audio monitors, UMDs, time code monitors, etc.), as well as composite monitors.
Video monitor	A *video monitor* is a layout element used to define an area for displaying a video signal. It is represented in XEdit by the boundary box made visible by clicking the element.

Term	Description
Video window	A *video window* is represented in XEdit by the blue rectangle inside a video monitor. The video window does not necessarily cover the complete video monitor's area.
Video raster	Video signal that is displayed inside the video monitor on a monitor wall.
AFD VI	Active Format Description encoded in the Video Index.
AFD 2016	Active Format Description encoded in the ancillary data (according to the SMPTE 2016 standard).
WSS	Wide Screen Signaling.
Automatic Aspect Ratio	The aspect ratio of video displayed on the monitor wall can be automatically adjusted. With multiple video players (monitors) on a monitor wall, in multiple formats/aspect ratios, this makes it easy to switch from one format to another in the same player. Automatic adjustment can be accomplished in two ways: • **Video monitor slaved to input:** A video monitor can be slaved to the input format such that the video monitor will change its aspect ratio according to the input signal type (e.g.SD, HD, DVI). • **Video raster follows AFD/WSS**: A video monitor can be configured so that WSS, AFD VI, or AFD 2016 metadata is used to crop (and/or add black bars to) the video signal, giving the video raster the correct aspect ratio. This metadata can be reported as friendly text inside a UMD. Its presence can also be made available in alarms as well as via SNMP traps. **Note:** The Automatic Aspect Ratio feature can also be configured for each multi-viewer input (see "Calibrating Automatic Aspect Ratio Decoding" on page 110).
Composite monitor	A *composite monitor* (also referred to as a *composite*, a *monitor* or a *tile*) is a group of primary elements that can be seen as a single object within a layout. Composite monitors typically include a video window, one or more audio level meters, and a UMD with two tallies.

Term	Description
Timer	A *timer* can be slaved to a production timer, controlled from the Kaleido-RCP2 (with start, stop and reset control via GPI inputs), and/or used for monitoring the duration of programs. Three *timer modes* are available: (1) UP: timer counts up starting from zero up to a preset time, (2) DOWN: timer counts down from a preset time to zero, and (3) REMAINING: timer counts down from the current time until it reaches a preset time. A *timer monitor* is based on a timer defined within the Kaleido-X system. Timers are defined and configured in XEdit. Timer monitors can be configured directly on the monitor wall. See "Configuring Timers" on page 207.
Alarm monitor	*Alarm monitors* help you see the status of global and virtual alarms, but their use is not limited to this type of alarms. When any alarm level is assigned to an alarm monitor, the status of this alarm is shown. When using the global alarm at the text label level, the alarm monitor displays the text value of the alarm, which is a readable name. See "Configuring Alarm Monitors" on page 216.
V-chip monitor	The *V-chip monitor* provides a visual indication of the V-chip rating from the CC (608) metadata in an SD video signal, or from the CC (608) legacy caption data, when such data is present within an HD video signal. See "Configuring V-Chip Monitors" on page 219.
Widget library	A *widget library* is a collection of predefined layout elements. Monitors from a library can be used to help construct a layout. More than one widget library can coexist.

Detailed Directions

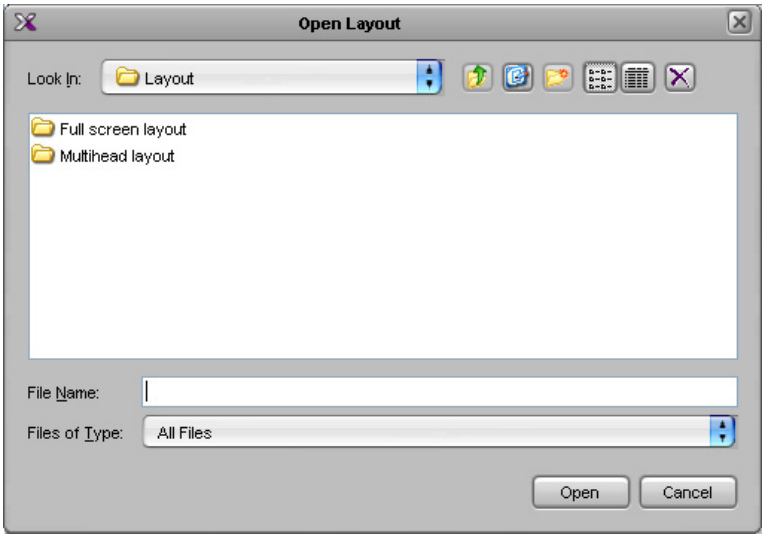
Managing Layouts

Opening an Existing Layout

To open an existing layout:

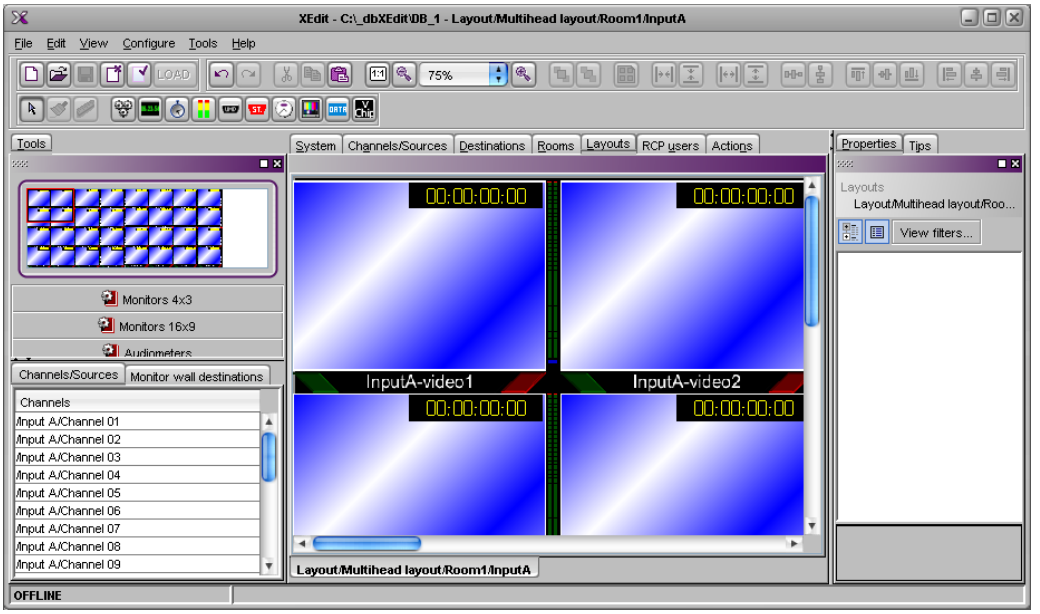
1. Click the **Layouts** tab.
2. On the **File** menu, click **Open**. Alternatively, click the Open button on the toolbar.

   The **Open Layout** window appears:



3. In **Open Layout**, navigate to the appropriate layout, and then click **Open**.

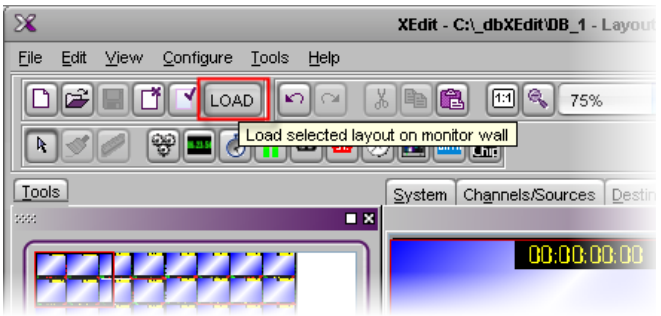
   The selected layout appears in the **Layouts** tab:



Loading a Layout on the Monitor Wall

To load a layout on the monitor wall, directly from XEdit, when working in online mode:

- Click the LOAD button on the toolbar:



The current layout appears on the monitor wall.

Closing a Layout

To close a layout:

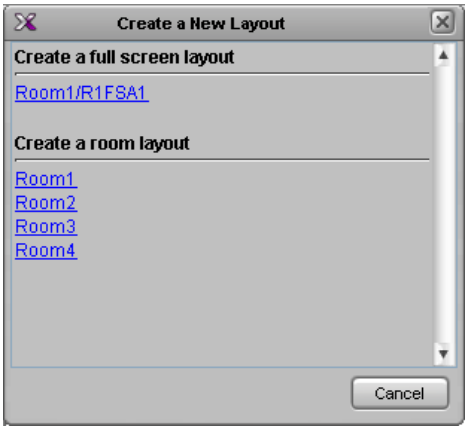
- On the **File** menu, click **Close**. Alternatively, click the Close button on the toolbar.

Creating Room Layouts

To create a room layout:

1. Click the **Layouts** tab in the main window.
2. On the **File** menu, click **New**.

   The **Create a New Layout** window appears. It lists all the existing rooms and full screen zones in your system:



3. Click the name of the room where this layout will be displayed.

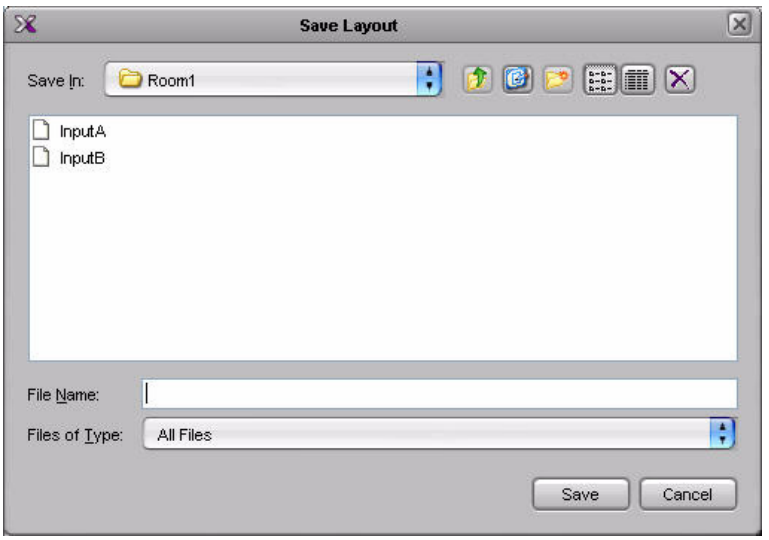
   An empty layout appears.
4. Add at least one monitor to the layout.

Note: In the case of a **KMV-3901/3911** multi-viewer, layouts are subject to the following limitations:

- up to eight video monitors over two displays (overlapping is not supported)
- up to four stereo audio level meters per video monitor
- one time code per video monitor
- only digital clocks are supported
- XDS metadata monitors are not supported

5. Assign every monitor a logical source. See "Adding Monitors to a Layout" on page 178.
6. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The **Save Layout** window appears:



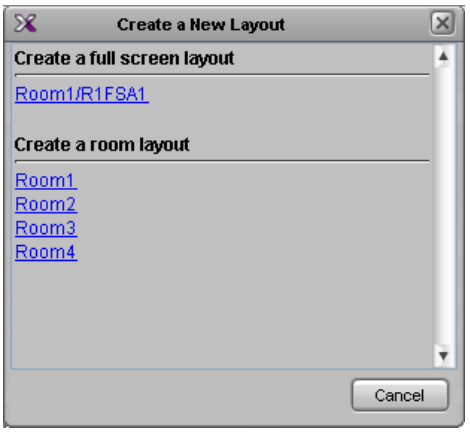
7. Type a name for the layout.
8. Click **Save**.

Creating Full Screen Layouts

To create a full screen layout:

1. Click the **Layouts** tab in the main window.
2. On the **File** menu, click **New**.

   The **Create a New Layout** window appears. It lists all the existing rooms and full screen zones in your system:

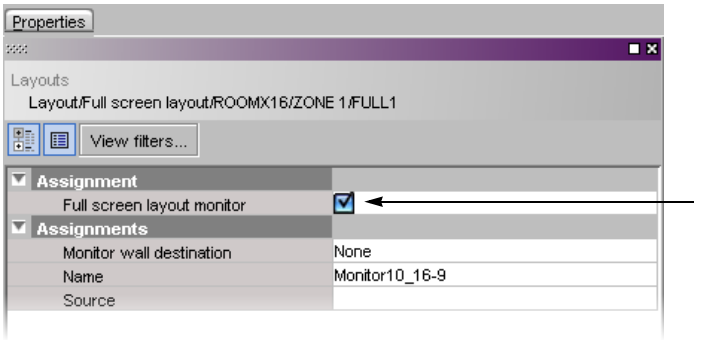


3. Click the name of the full screen zone in which this layout will be displayed.

   An empty layout area appears.

4. Add at least one monitor to the layout (see "Adding Monitors to a Layout" on page 178).

   If the full screen layout includes more than one composite monitor, you can designate one of them who will receive its source assignments from the monitor under the mouse pointer on the monitor wall, by selecting the **Full screen layout monitor** option in the **Properties** pane:



   Make the appropriate assignments for the other elements in the layout (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182).

5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   The **Save Layout** window appears.

6. Provide a name for the full screen layout.

7. Click **Save**.

Adding Monitors to a Layout

Note: In the case of a **KMV-3901/3911** multi-viewer, layouts are subject to the following limitations:

- up to eight video monitors over two displays (overlapping is not supported)
- up to four stereo audio level meters per video monitor
- one time code per video monitor
- only digital clocks are supported
- XDS metadata monitors are not supported

To add monitors to a layout:

1. Drag components from the widget libraries onto the layout, or create custom components, using the toolbar buttons.

   Note: All open widget libraries appear in the **Tools** pane.

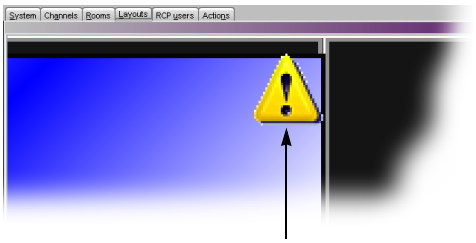
2. Resize, move and configure the monitors until the desired layout is achieved.

See also: For detailed configuration instructions on the different monitor types, refer to:

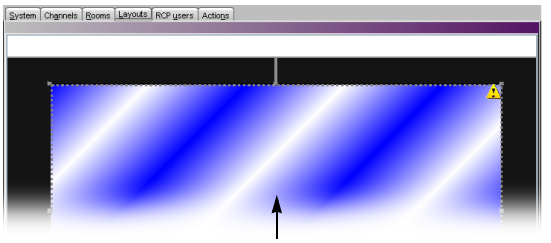
- "Configuring Video Monitors" on page 187
- "Configuring Audio Monitors" on page 199
- "Configuring Timers" on page 207
- "Configuring UMDs" on page 214
- "Configuring Alarm Monitors" on page 216
- "Configuring Metadata Monitors" on page 218
- "Configuring V-Chip Monitors" on page 219
- "Configuring Clocks" on page 220
- "Working with Composite Monitors" on page 225
- "Managing Widget Libraries" on page 234

Spanning

Graphical layout elements (UMDs, audio monitors, etc.) and video monitors can be made to span across multiple heads, on up to 4 displays, portrait or landscape, in any combination. On displays that fit perfectly side by side, this gives the impression of having one large screen. When any layout element is spanned across displays, an icon automatically appears in the top right corner:



Warning icon appears even if monitor is one pixel over the edge

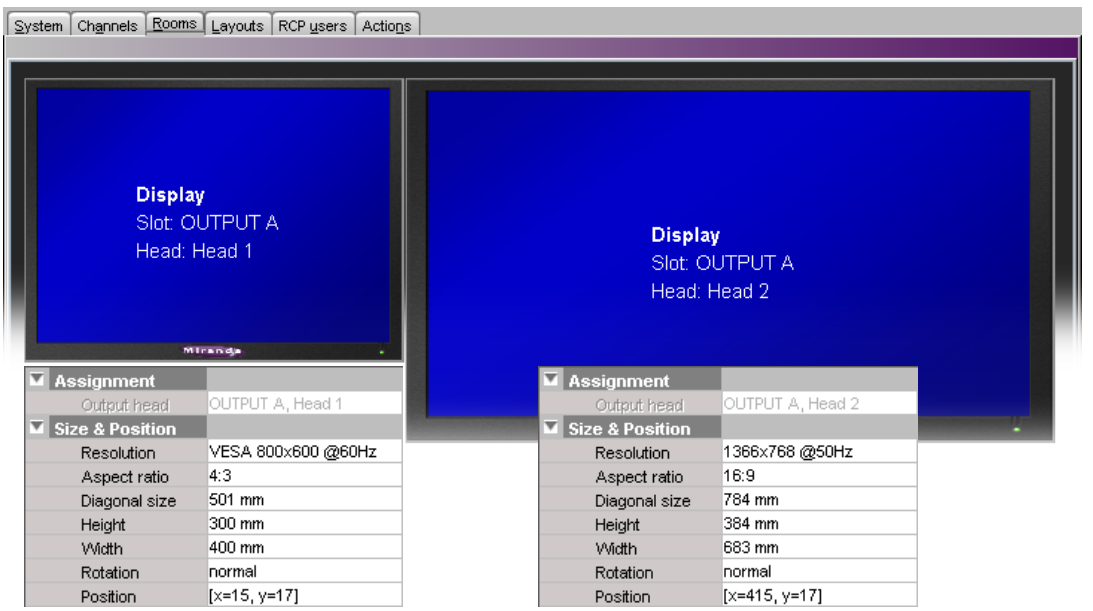


Video monitor spanned over two displays with warning icon in top right corner

To avoid pixel cropping on spanned monitors, you must position room displays so that there is no gap between them. Use XEdit's **Remove horizontal space** and/or **Remove vertical space** buttons to make sure your displays are perfectly positioned for spanning.

You must also ensure that each display has the same pixel-per-inch (or -per-mm) ratio, calculated as horizontal resolution (pixels) divided by display width (inches or mm) and vertical resolution divided by display height. Ideally, you should use displays that have the same physical size and resolution.

The figure below shows two displays properly sized and positioned for monitor spanning:



Assignment	
Output head	OUTPUT A, Head 1
Size & Position	
Resolution	VESA 800x600 @60Hz
Aspect ratio	4:3
Diagonal size	501 mm
Height	300 mm
Width	400 mm
Rotation	normal
Position	[x=15, y=17]

Horizontal: 800 pixels ÷ 400 mm = 2 pixels/mm
Vertical: 600 pixels ÷ 300 mm = 2 pixels/mm

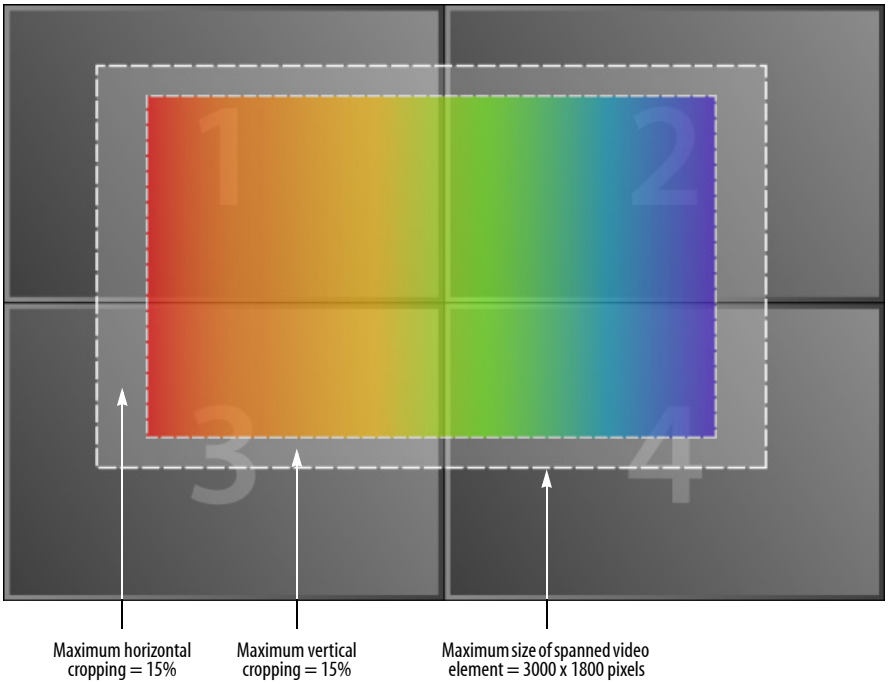
Assignment	
Output head	OUTPUT A, Head 2
Size & Position	
Resolution	1366x768 @50Hz
Aspect ratio	16:9
Diagonal size	784 mm
Height	384 mm
Width	683 mm
Rotation	normal
Position	[x=415, y=17]

Horizontal: 1366 pixels ÷ 683 mm = 2 pixels/mm
Vertical: 768 pixels ÷ 384 mm = 2 pixels/mm

Notes

- Monitors can extend outside the edge of a display, but not completely.
- The use of a mouse is not completely supported with spanned video monitors.
- In the case of a KMV-3901/3911 multi-viewer, which supports a maximum of eight video monitors over two displays, a spanned video monitor counts as two (i.e. if you have one spanned video monitor, you can only add six other video monitors to your layout; if you span two video monitors, you can add only four other video monitors.

- Do not span a layout element beyond a maximum of 3000 × 1800 pixels. When spanning or scaling video monitors in a layout, avoid heavy cropping settings (generally avoid exceeding 15% in any direction).



- There is no special configuration to be done in XEdit.

Duplicating Monitors

To duplicate a monitor within a layout:

1. Click the monitor you wish to duplicate.
2. On the **Edit** menu, click **Duplicate**. Alternatively, press Ctrl+D.

   A copy of the monitor is added to the layout.
3. Move the new monitor to the appropriate position on the layout.
4. Press Ctrl+D again, and repeat until the desired number of copies of the monitor are added to the layout.

   The new copies are automatically positioned at intervals matching the relative positions of the original monitor and its first duplicate.

Automatically Populating a Grid-Type Layout

Use the *Auto-layout* tool, to quickly create a layout containing several rows of up to 256 identical composites.

To automatically populate a grid-type layout:

1. Add a first monitor to the layout (see "Adding Monitors to a Layout" on page 178, and "Working with Composite Monitors" on page 225).
2. Position the monitor so that its upper left corner marks the location where you wish to start populating the grid.
3. Click the monitor, and then click the Auto-layout button ( ) on the toolbar.
4. In the **Auto-Layout** window, type the total number of monitors you wish to spread over the area delimited by the upper left corner of the current monitor and the bottom right corner of the current head, and then click **OK**.

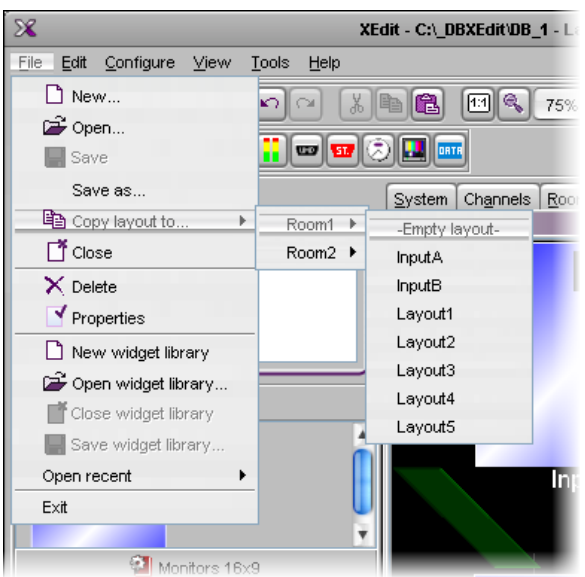
   The first monitor is resized and replicated until the grid area is populated with the specified number of monitors.

> **Note:** To undo this action, you will need to press Ctrl + Z twice: once to remove the copies, and then once more to restore the first monitor's initial size.

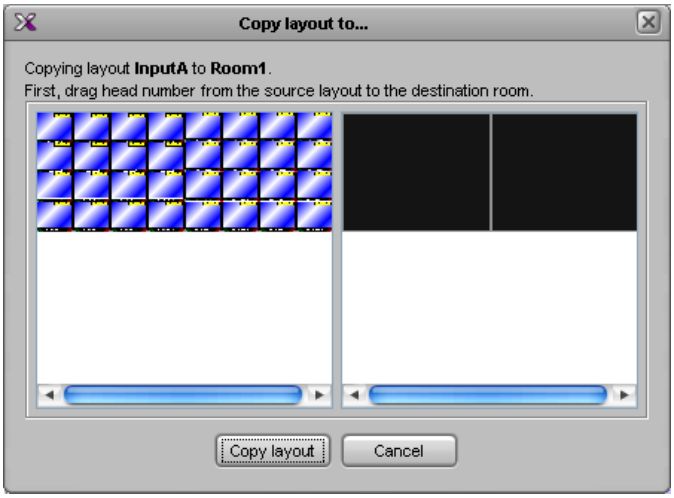
Copying layouts

To copy a layout:

1. Open the layout you wish to duplicate.
2. On the **File** menu, click **Copy layout to**, point to the appropriate room, and then either select an existing layout from the list, or click **Empty layout:**



A two-pane window appears. The left pane represents the source layout, and the right pane represents the destination room where the new layout is to be used:


Copy layout to...
Copying layout InputA to Room1.
First, drag head number from the source layout to the destination room.
Copy layout
Cancel

3. Drag one head from the source pane to the destination pane.
4. Repeat until every part of the source layout you wish to copy has been dragged to the appropriate head in the destination pane, and then click **Copy layout**.

   The **Save Layout** window appears.
5. In **Save Layout**, type a name for the new layout, and then click **Save**. Alternatively, you can replace an existing layout with the new layout.

Assigning Logical Sources or Monitor Wall Destinations to Monitors

In addition to the widget libraries, the **Tools** pane includes filtered lists from which you can make assignments by dragging logical sources and monitor wall destinations onto monitors.

> **Note:** You do not need to select the monitor first.

To assign a logical source to a monitor:

- Select a logical source from the filtered **Channels/Sources** list, in the **Tools** pane, and then drag it onto the appropriate monitor.

To assign a monitor wall destination to a monitor:

- Select a destination from the filtered **Monitor wall destinations** list, in the **Tools** pane, and then drag it onto the appropriate monitor.

Selecting a Background Image for a Layout

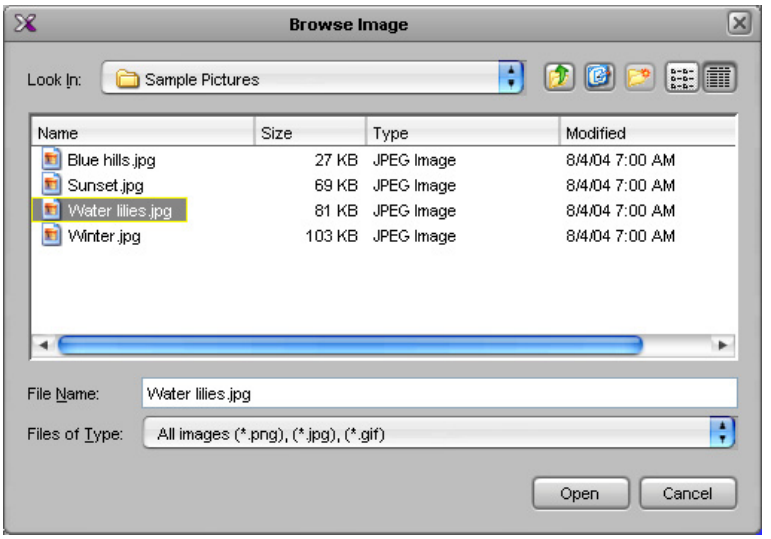
For some purposes, you may wish to display a layout's elements against a specific static image.

To select a background image for a layout:

1. Click the **Layouts** tab, and open the layout whose background you wish to set.

2. Click the display background on the layout.
3. In the **Properties** pane, click the **Background image** box, under **Appearance**, and then click the button that appeared at the end of the box.

   The **Select Image** window appears.
4. If the image you wish to use is not already listed in **Select Image**, then click the **Open** button to open the **Browse Image** window. Locate the image, select it, and then click **Open**.



   The image is imported into the current database.

> **Note:** The maximum size for each image is 256 KB, and the maximum overall size (for all images) is 10 MB. The image can be in PNG, GIF, or JPEG format. Images can be used on multiple layouts and only need to be imported to the database once.

5. In **Select image**, select the image file from the **Image selection** list, and then click **OK**:

The image appears in the layout background.

Setting up a Layout for Background Keying from the DVI Input

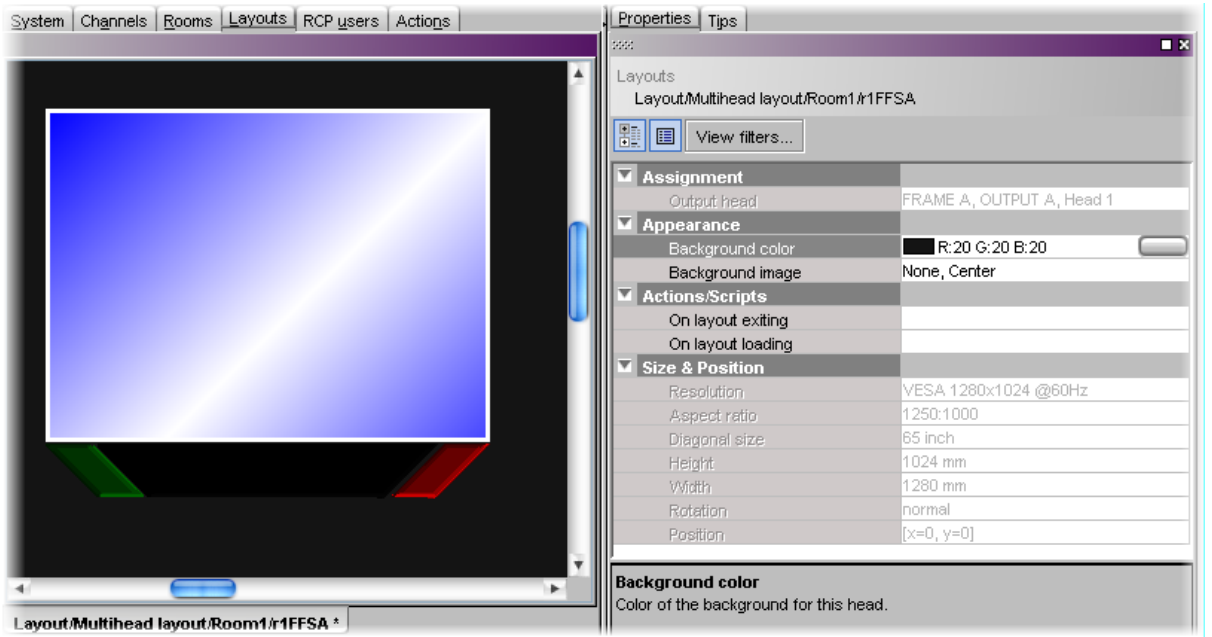
> **Note:** The KMV-3901/3911 multi-viewer does not support DVI keying.

Kaleido-X and Kaleido-X16 multi-viewers have a DVI input connector for every output head. Using these connectors, it is possible to feed keying material to the multi-viewer. Depending on your purposes, the content provided through the DVI input can be set either as a background or as a foreground for the layout shown on the monitor wall (see "Calibrating the DVI Keying Mode" on page 101). This section explains how to set up a layout's background to be keyed out and replaced with content from the DVI input.

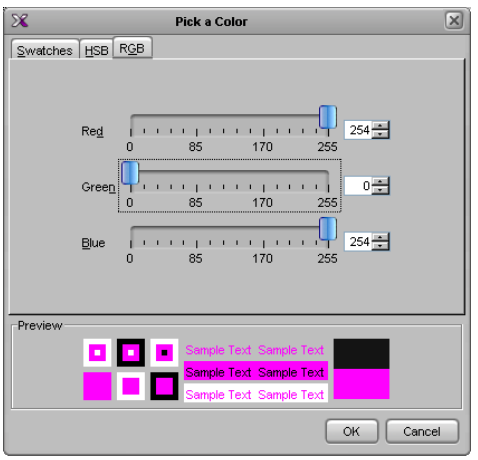
> **Note:** Since the DVI input cannot be resized, the resolution on the PC that feeds this input is best set to match the selected display's (head) resolution. The DVI background is always positioned from the top-left corner of the display and is drawn pixel for pixel. If the resolutions do not match, some part of the DVI input might be missing or noise might be displayed.

To use the DVI input as the background in a layout:

1. Click the background of the layout.
2. In the **Properties** pane, click the **Background color** box, and then click the button that appears inside the box to open the **Pick a Color** window:



3. In **Pick a Color**, click the **RGB** tab, and then set the **Red** to 254, **Green** to 0 and **Blue** to 254:



Note: Since bright pink colors matching the RGB values listed below are considered pass-through colors, and since background keying is always enabled, if a layout's background color (or any monitor's color attribute) is set to any of these RGB values, the DVI input will be displayed in the corresponding areas on the monitor wall. If there is no signal at the associated DVI input (or the multi-viewer does not support DVI input, as would be the case with a KMV-3901/3911), residual data may be visible in such areas.

- **Pass-through colors:** RGB (254,0,254), (254,0,255), (254,1,254), (254,1,255), (255,0,254), (255,0,255), (255,1,254), (255,1,255)

Do not use these colors for any monitor's color attributes. A layout's background should only be set to such a color if a DVI input will be contributing the actual background for this layout on the monitor wall.

4. Click **OK**.
5. If the area you wish to configure for background keying covers more than one head, repeat the procedure for the remaining heads, by clicking the corresponding areas in the layout.
6. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Zooming and Panning a View

To adjust the portion of a layout or room that is shown in the main window:

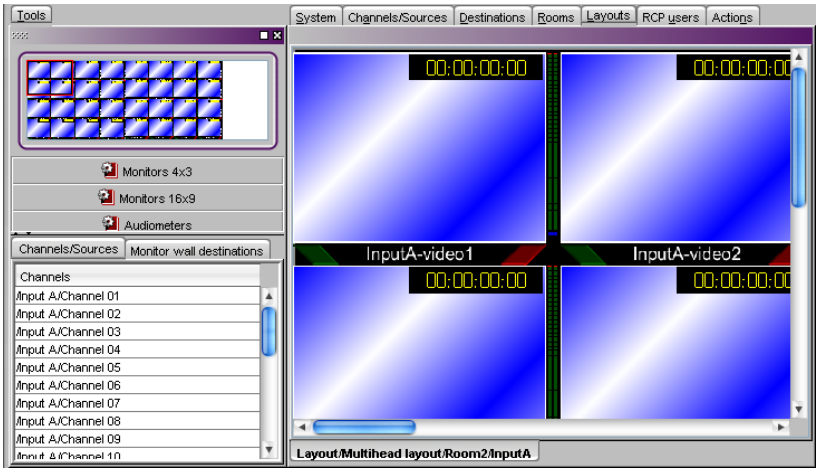
- Press and hold the Ctrl key, then press the plus key (+) to zoom in or the minus key (–) to zoom out.
- Press and hold the Ctrl key, then rotate the mouse wheel to zoom in or out.
- Type the zoom factor you wish to apply (in the range of 2% to 1600%) directly in the zoom box.
- Press and hold the spacebar, then click and drag to pan.
- Use the scroll bars at the right side and bottom of the **Layouts** or **Rooms** tab.
- In the case of a layout view, click and drag the layout navigator's red rectangle in the **Tools** pane.

Showing and Hiding the Layout Navigator

To show or hide the layout navigator:

- On the **View** menu, click **Navigator**. Alternatively, press Ctrl+Shift+N.

  The layout navigator will appear in the **Tools** pane if it was hidden, and vice versa:



Configuring Video Monitors

Resizing a Video Monitor

To resize a video monitor:

- Drag any of the corner handles, inwards or outwards.

  The video monitor, and the associated video window, will become smaller or larger, and they will both keep their aspect ratio.

- Drag any of the side handles, inwards or outwards.

  The bounds of the video monitor will change, while the video window will still keep its aspect ratio.

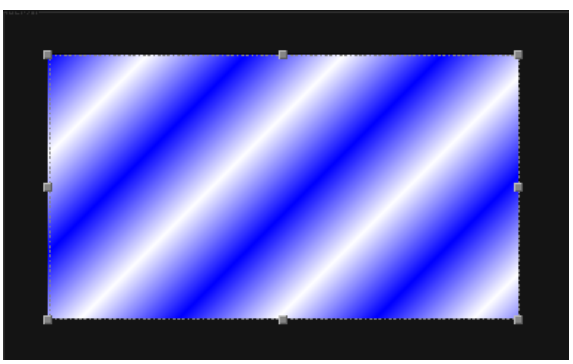
- Change the aspect ratio property of the video monitor. See "Setting a Video Monitor's Aspect Ratio" below.

  The video monitor will keep its bounds, and the video window will be resized to fill as much of the video monitor area as possible, given the new aspect ratio.

Setting a Video Monitor's Aspect Ratio

To set a video monitor's aspect ratio:

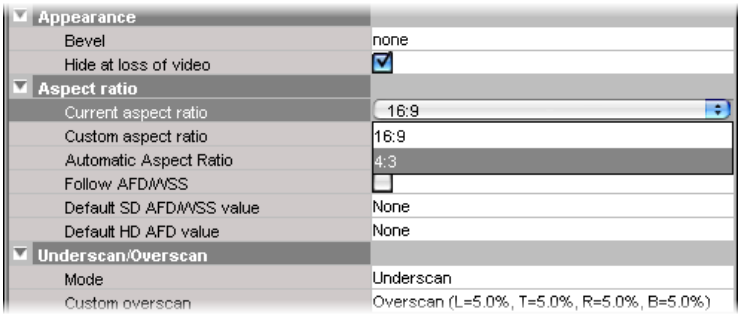
1. Click the video monitor whose aspect ratio you wish to configure:



Video monitor with an aspect ratio of 16:9

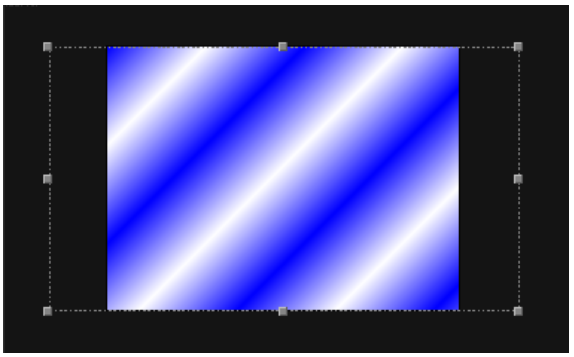
> **Note:** Double-click the video, if is part of a composite monitor.

2. In the **Properties** pane, click the **Current aspect ratio** box, and then select the appropriate aspect ratio from the list:



Aspect ratio selection

The selected aspect ratio is applied to the video window, within the video monitor:



Video window's aspect ratio changed to 4:3, within a 16:9 video monitor

To set a custom aspect ratio for a video monitor:

1. Click the video monitor for which a custom aspect ratio is needed.

   Note: Double-click the video, if is part of a composite monitor.

2. In the **Properties** pane, click the **Custom aspect ratio** box.

   The box becomes editable.

3. Type the appropriate aspect ratio, and then press Enter.

   The new aspect ratio is applied to the video window, within the video monitor, and it is added to both the **Current aspect ratio**, and **Custom aspect ratio** lists.

   Note: The custom values are appended to the **Custom aspect ratio** list on an ongoing basis. They can then be applied to other monitors in other layouts. **Current aspect ratio** only lists the current custom ratio, if any, in addition to the default 16:9, and 4:3 values.

Adding Safe Area Markers

To add safe area markers for a video monitor in a layout:

1. Click the video monitor whose safe area you wish to configure.

> **Note:** Double-click the video, if is part of a composite monitor.

2. In the **Properties** pane, select the appropriate options, under **Safe area markers**.

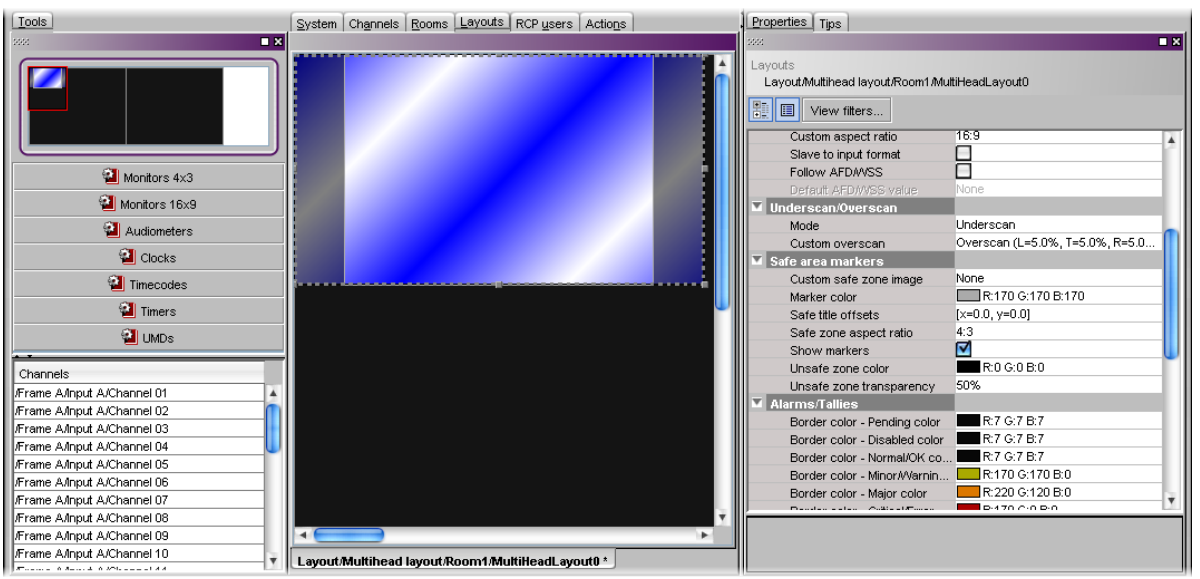
Adding a Custom Safe Area Image

XEdit allows you to superimpose an image, e.g. a brand graphic, on top of a video monitor in such a way that a video signal will show through the transparent areas in the graphic. This is accomplished by adding a free-form safe area image to the video monitor. The image can be in PNG, GIF, or JPEG format.

> **Note:** The maximum size for each image is 256 KB, and the maximum overall size (for all images) is 10 MB. The image can be in PNG, GIF, or JPEG format. To ensure that the aspect ratio of the imported image is preserved, you should position the graphic on a fully transparent background with the same aspect ratio as the video monitor on which it is to appear.

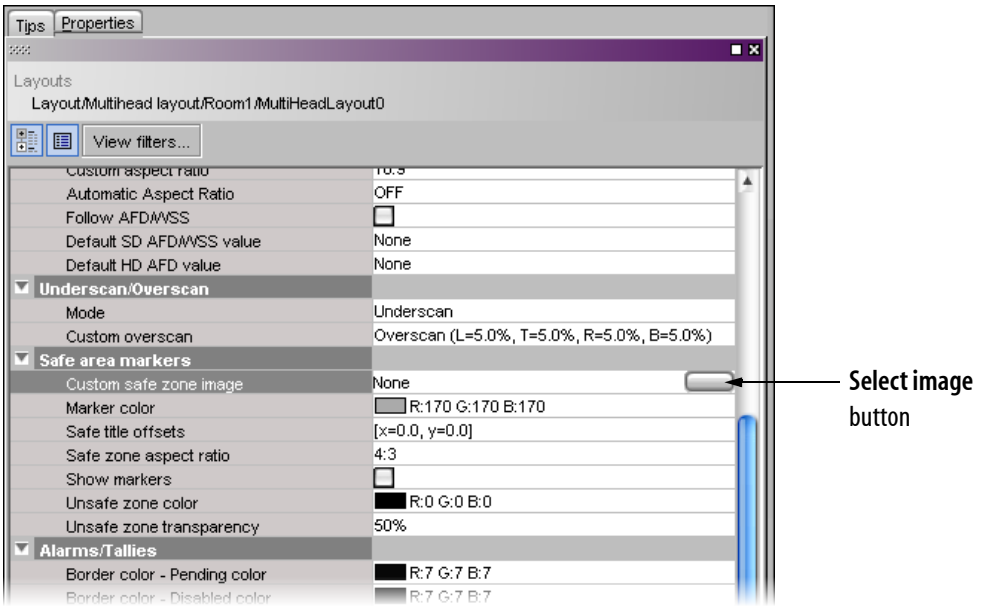
To add a free-form safe area image to a video monitor:

1. Open an existing layout, or create a new one.
2. Click an existing video monitor in the layout, or create a new one.
3. In the **Properties** pane, select the **Show markers** check box, under **Safe area markers:**

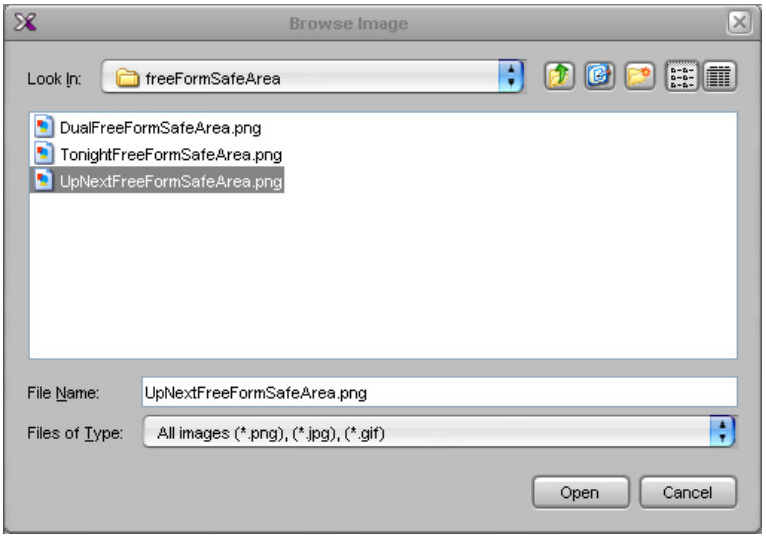


4. Click the **Custom safe zone image** box.

A button appears inside the box:



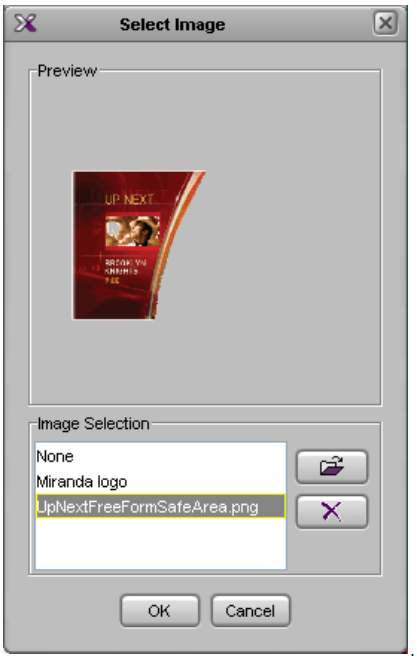
5. Click the button to open the **Select Image** window.
6. If the image you wish to use is not already listed in **Select Image**, then click the **Open** button to open the **Browse Image** window, locate the image, select it, and then click **Open**:



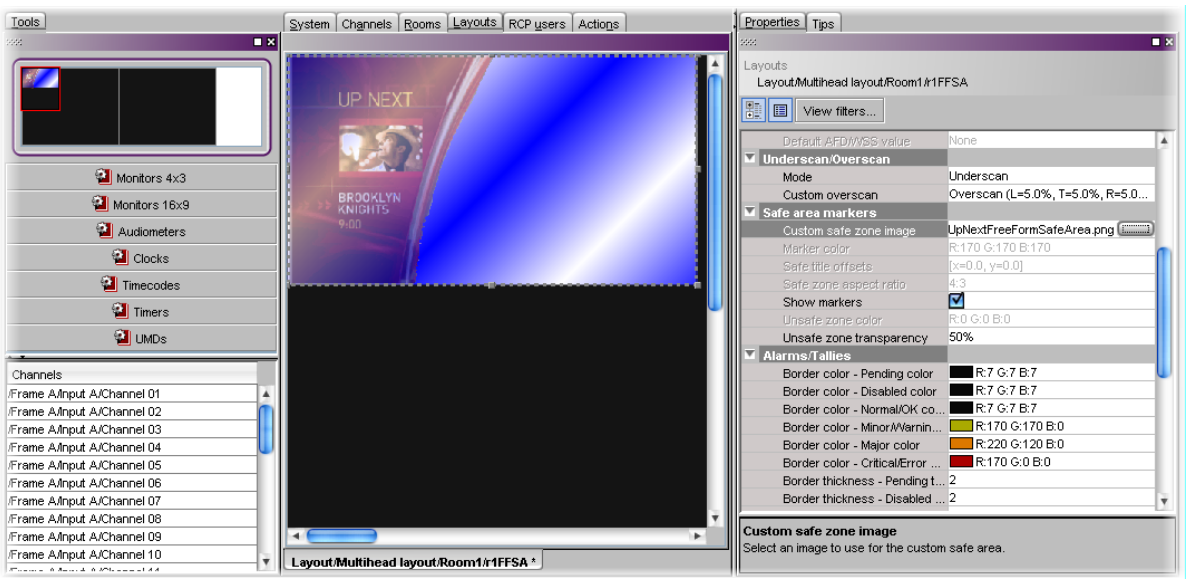
The image is imported into the current database.

> **Note:** Images can be used on multiple layouts and only need to be imported to the database once.

7. In **Select image**, select the image file from the **Image selection** list, and then click **OK**:



8. The image appears on the video monitor:



9. To adjust the transparency level of the image, click the **Unsafe zone transparency** box, then move the slider or type the desired transparency value directly in the box. At 0% the portions of the image that correspond to the unsafe area are opaque; at 100% the entire image is transparent.

> **Note:** When a custom safe zone image is selected, the following attributes are not available: **Marker color**, **Safe title offsets**, **Safe zone aspect ratio**, and **Unsafe zone color**.

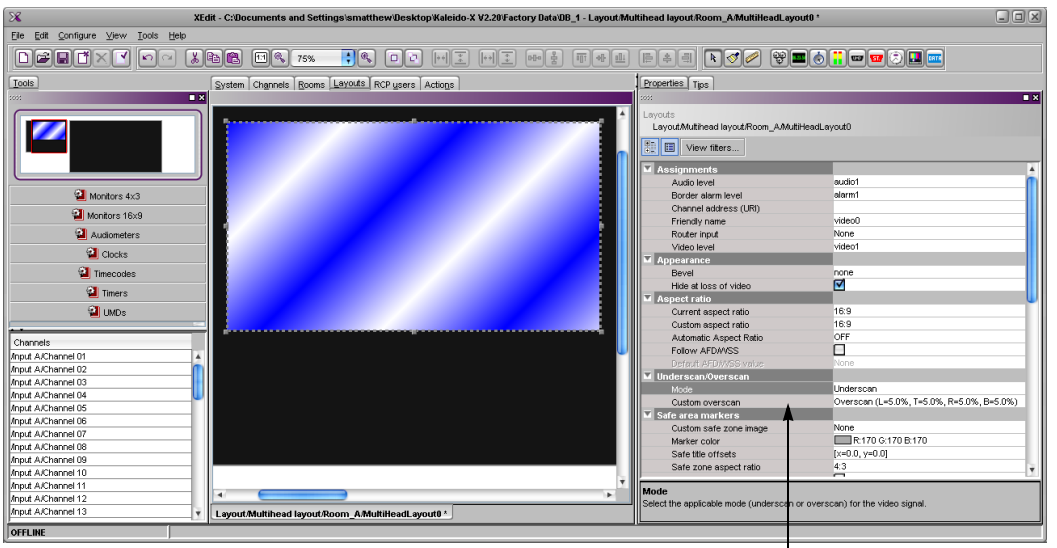
Video Cropping/Zooming

The display of a video signal can be cropped to remove unwanted portions. In XEdit, users can choose between underscan or overscan. Overscan settings can be customized.

> **Changing the underscan/overscan mode dynamically:** It is also possible to dynamically change the overscan/underscan mode based on a feed assigned to a video monitor. For example, you can change logical sources in a video monitor using Gateway commands, where a video source requires the monitor to be in overscan mode but a graphics source requires the monitor to be in underscan mode to avoid cropping the image. A custom action script can make the monitor change its scan mode depending on the format detected. For information on how to create such a script, please contact *support@miranda.com*.

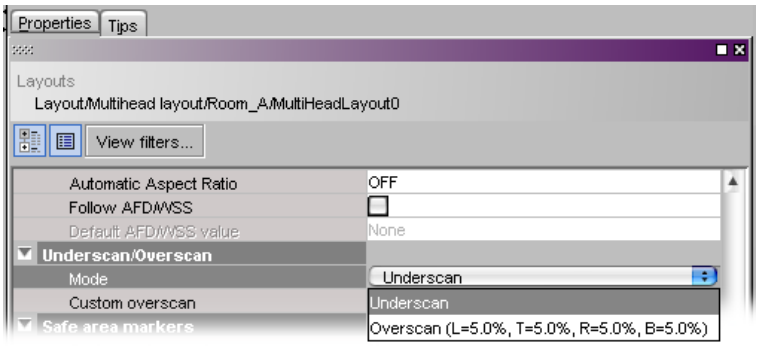
To set the underscan/overscan properties of a video monitor:

1. In XEdit, open a layout and click to select the video monitor for which you wish to specify overscan/underscan settings:

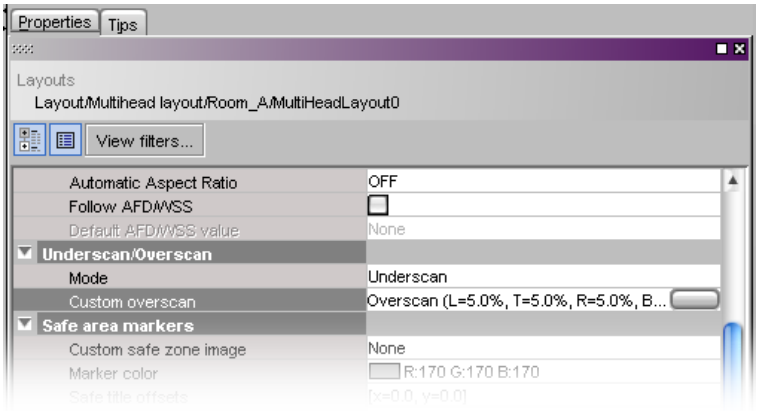


   The **Underscan/Overscan** settings appear in the **Properties** pane.

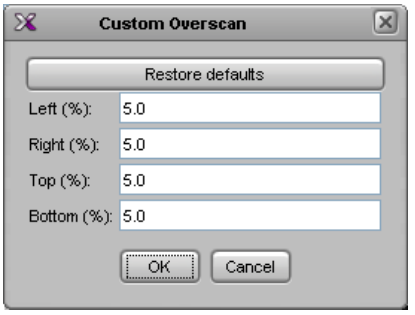
2. Choose **Underscan** (to display the entire video signal) or **Overscan** (to display a cropped video signal) from the drop-down menu beside **Mode**:



3. To specify custom crop settings, click in the white area to the right of **Custom overscan**, then click the button that appears:



4. In the **Custom Overscan** window, specify new percentage values for **Left**, **Right**, **Top**, and **Bottom** overscan margins, then click **OK**:



> **Note:** Generally avoid exceeding 15% in any direction. You can click **Restore defaults** to enter the default overscan values (left, right, top and bottom = 5%). Safe title area and aspect ratio markers follow the video signal (e.g. if the safe title is within 5% of top, left, right and bottom, then when the video is in default overscan mode, the safe title will not appear).

When the layout is loaded on the Kaleido-X, the updated overscan/underscan properties become available.

Configuring Automatic Aspect Ratios

The aspect ratio of video displayed on the monitor wall can be automatically adjusted. With multiple video players (monitors) on a monitor wall, in multiple formats/aspect ratios, this makes it easy to switch from one format to another in same player. Automatic adjustment can be accomplished in two ways:

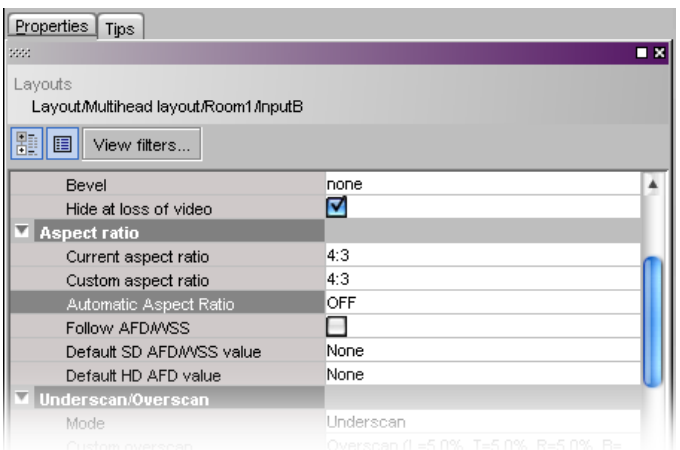
- **Video monitor slaved to input:** A video monitor can be slaved to the input format such that the video monitor will change its aspect ratio according to the input signal type (e.g. SD, HD, DVI).
- **Video raster follows AFD/WSS**: A video monitor can be configured so that WSS, AFD VI or AFD 2016 metadata is used to crop (and/or add black bars to) the video signal, giving the video raster the correct aspect ratio. This metadata can be reported as friendly text inside a UMD. Its presence can also be made available in alarms as well as via SNMP traps.

Term	Definition
Video raster	Video signal that is displayed inside the video monitor on a monitor wall
AFD VI	Active Format Description encoded in the Video Index
AFD 2016	Active Format Description encoded in the ancillary data (according to the SMPTE 2016 standard)
WSS	Wide Screen Signaling

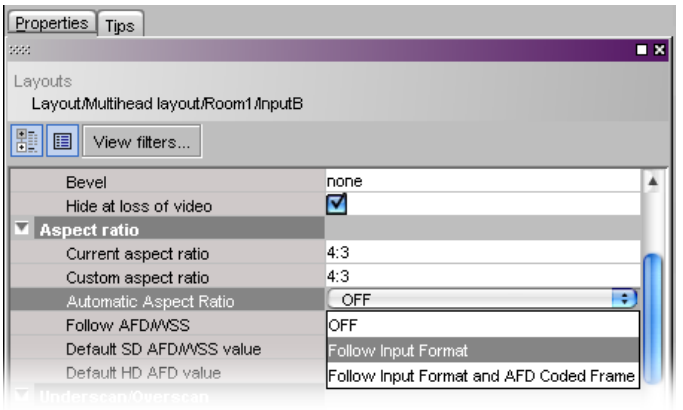
The Automatic Aspect Ratio feature can also be configured for each video input (see "Calibrating Automatic Aspect Ratio Decoding" on page 110).

To slave a video monitor to the input signal aspect ratio:

1. In the **Layouts** tab, select the video monitor for which you wish to apply automatic format detection (OFF by default):



2. Select the appropriate value from the **Automatic Aspect Ratio** list.



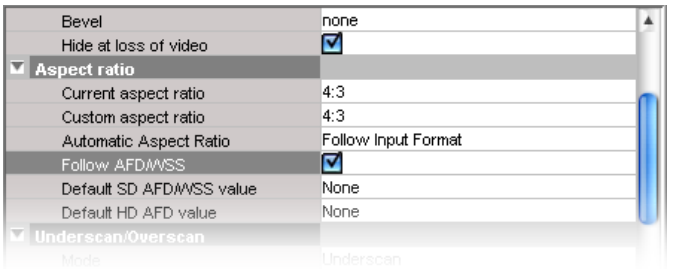
– If the Automatic Aspect Ratio property is set to **Follow Input Format**, then the video monitor will change its aspect ratio based on the input feed's format.

– If the Automatic Aspect Ratio property is set to **Follow Input Format and AFD Coded Frame**, then the video monitor will change its aspect ratio according to the AFD Coded Frame. If there is no AFD present, the default value for the current format (i.e. Default HD AFD Value if the input is HD, or Default SD AFD/WSS Value is the input is not HD) is used. If the Default is None, then the input feed aspect ratio is used.

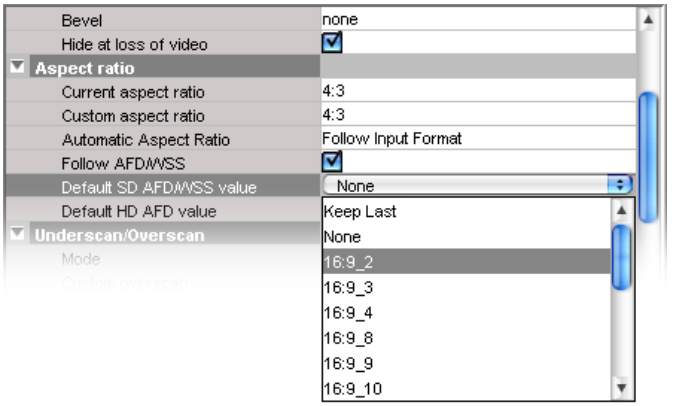
3. Click the **Save** button.

To have a video raster to follow a video signal's AFD/WSS metadata:

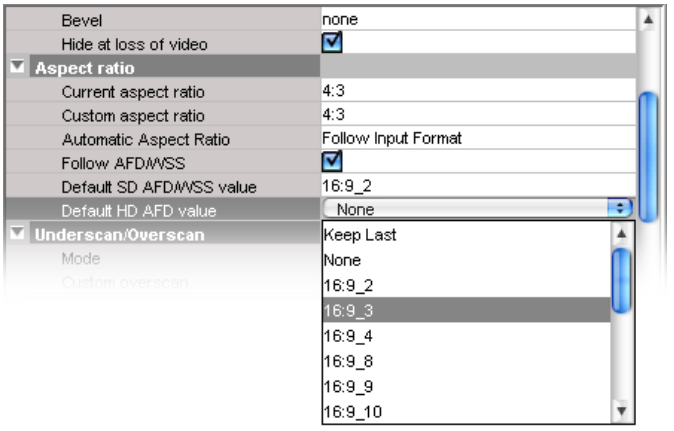
1. Click to put a check mark in the box labeled **Follow AFD/WSS:**



2. Choose a value from the drop-down menu beside **Default SD AFD/WSS value**. This is the setting that will be used when there is no AFD or WSS in the SD signal. Choose **Keep Last** to have the video window maintain the last decoded AFD or WSS value if the signal is paused:



3. Choose a value from the drop-down menu beside **Default HD AFD value.** This is the setting that will be used when there is no AFD in the HD signal. Choose **Keep Last** to have the video window maintain the last decoded AFD value if the signal is paused:



4. Click the **Save** button.

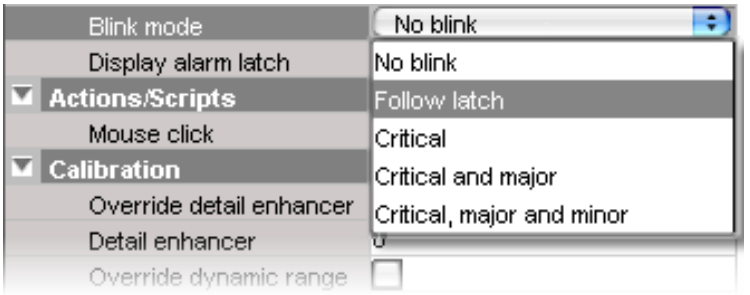
Configuring a Video Monitor's Alarm Reporting Behavior

To prevent users from missing temporary alarms on the monitor wall, monitors that are capable of displaying an alarm status (e.g. video monitors, UMDs, alarm monitors) can be configured with a latching mechanism. An alarm latch will keep the error state visible until someone acknowledges the associated alarm. Video monitors can provide alarm status information through their borders' color and blinking behavior, and show the latched state as small indicators in each corner of the video window.

To set the alarm reporting features for a video monitor:

1. In XEdit, open a layout and click the video monitor whose alarm reporting behavior you wish to configure.
2. In the **Properties** pane, scroll down to the **Alarms/Tallies** section:

3. Set the appropriate border color scheme and associated thickness attributes.
4. Click the **Blink mode** box, and then select the appropriate blinking behavior, for your purposes:



5. The Kaleido-X supports the following blinking modes:

Blink mode	Description
Off	The status indicator will never blink.
Follow Latch	The status indicator's blinking will follow the latch status. The indicator will blink until someone unlatches the alarm.
Critical	The status indicator will blink when the current status is critical.
Critical or Major	The status indicator will blink when the current status is critical or major.
Critical, Major and Minor	The status indicator will blink when the current status is critical, major or minor.

6. Select the **Display alarm latch** check box to enable the latched status indicators in each corner of the video window.

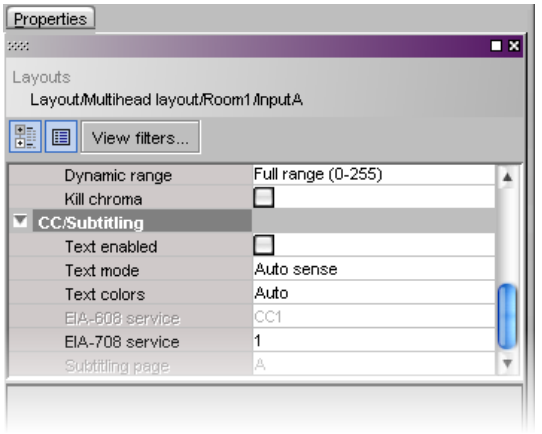
Setting a Video Monitor's Text Mode

> **Note:** Closed captioning/subtitling text services can be enabled by purchasing the Extraction of CC, Subtitling and XDS data option. The CC 608, CC 708, XDS and Subtitling WST are all activated as a single option. In the case of the Kaleido-X (4RU) and Kaleido-X (7RU) models, one key is needed per input card. See "Enabling Options" on page 371 for more information.

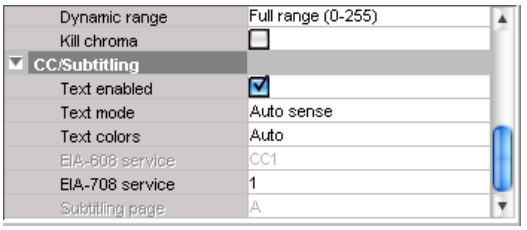
To set the subtitling properties of a video monitor:

1. In XEdit, open a layout and click the video monitor for which you wish to specify subtitling properties.

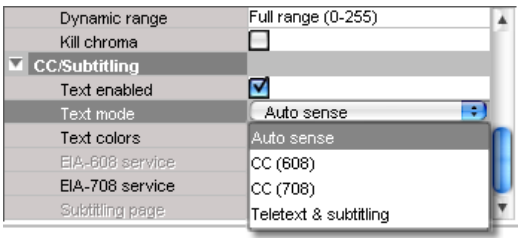
   The **CC/Subtitling** settings appear in the **Properties** pane.



2. Select the **Text enabled** check box.



3. Select a value from the **Text mode** list.

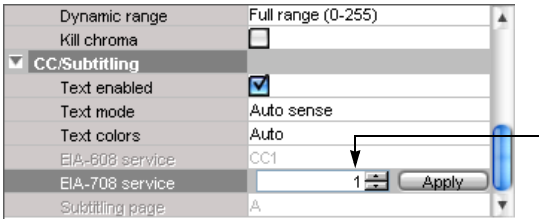


4. Select the appropriate option from the **Text colors** list:

– **Auto**: To display text in colors, as defined in the signal.

– **Black & white**: To display white characters against a black background, regardless of what is specified in the signal.

5. Specify an EIA-708 service value, if necessary, and then click **Apply**.



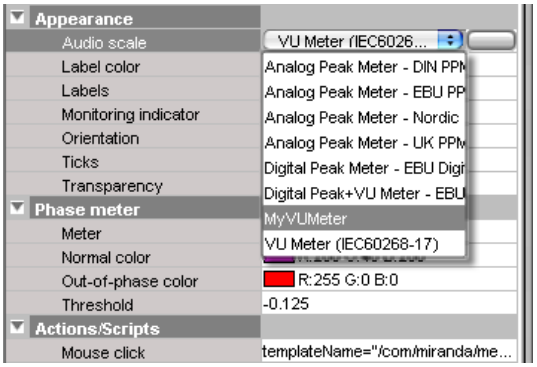
Notes

- The current version of the Kaleido-X Software supports foreground colors for teletext (WST, OP-47) only. Closed captions (CC, DTVCC) will appear in white against a black background.
- If you do not need teletext to be displayed in colors, then you may find that selecting **Black & white** will improve your system's performance.
- In the case of the Subtitling (WST) text services, the Kaleido-X supports decoding of one preset page (called "Page A") per video signal on the monitor wall.
- In the case of EIA-608, only CC1 subtitles can be decoded.

Configuring Audio Monitors

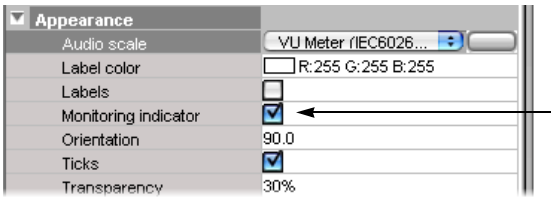
To configure an audio monitor:

1. In the **Layouts** tab, click the audio monitor you wish to configure.
2. In the **Properties** pane, click the **Audio scale** box, under **Appearance**, and then select the appropriate audio scale from the list.

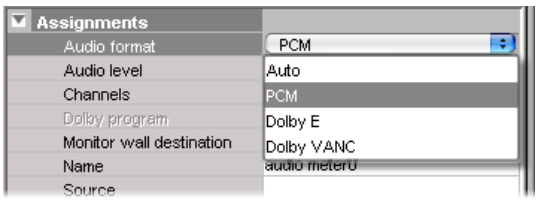


Note: See "Configuring Audio Scales" on page 201 for more information.

3. The **Monitoring indicator** check box is selected by default. Audio monitors with a monitoring indicator show by their color that someone is listening to the same audio level. There could be a distinctive color for each of the displays at the site, or one for each room, etc., telling you in more or less details, where the audio is currently being monitored. Clear the check box if you do not need this:

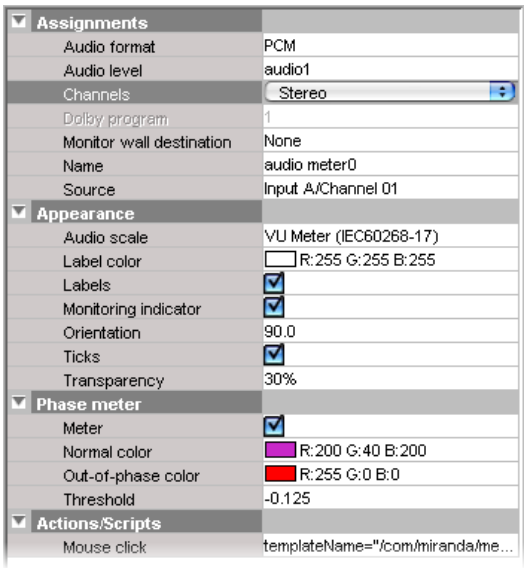


4. Under **Assignments**, click the **Audio format** box, and then select the appropriate format from the list:



Note: See "Configuring Audio Metadata" on page 205 for more information.

5. Make the appropriate assignments (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182) and set the other attributes, as needed:



Note: See "Creating Actions" on page 237 for more information.

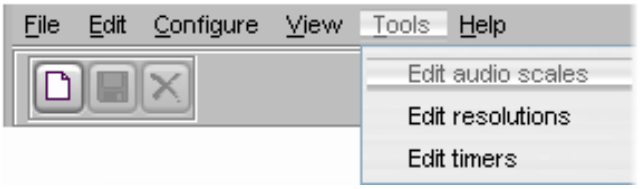
Configuring Audio Scales

You can configure audio scales in two ways: either globally, from the **Tools** menu, or by clicking a specific audio monitor in a layout.

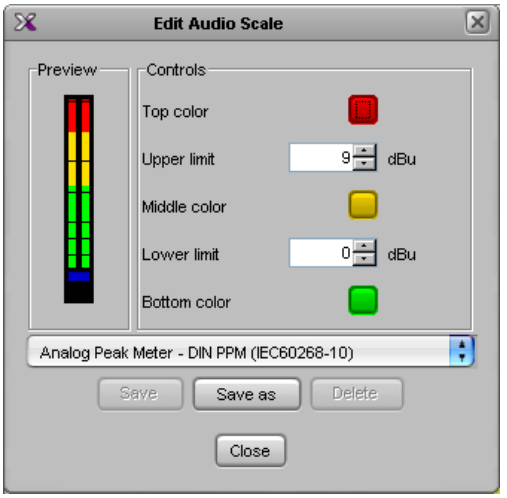
Configuring Audio Scales From the Tools Menu

To configure an audio scale from the Tools menu:

1. On the **Tools** menu, click **Edit audio scales:**



The **Edit Audio Scale** window appears:

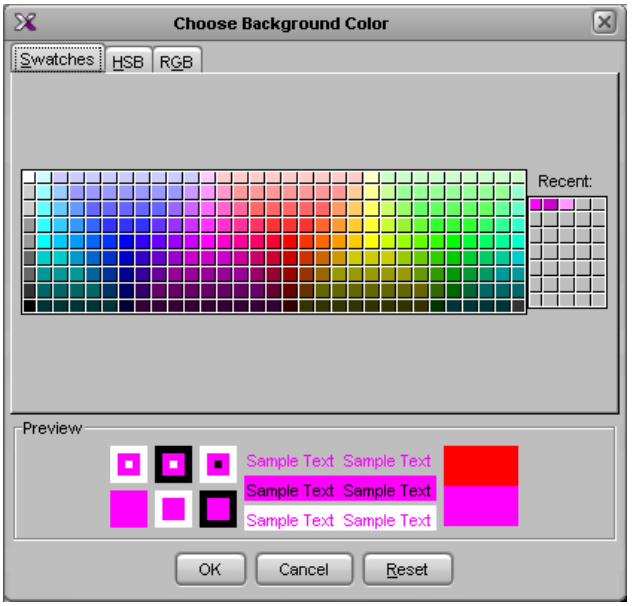


2. Select the audio scale you wish to customize (or the one on which you wish to base a new audio scale), from the list at the bottom of the window.

> **Note:** When you modify one of the default audio scales, you can only save your changes as a new audio scale. On the other hand, custom audio scales can be tweaked and saved repeatedly until the desired configuration is achieved.

3. Click one of the **Top**, **Middle** or **Bottom Color** buttons to set the top, middle and bottom color.

   The **Choose Background Color** window appears:



4. Click the appropriate color square.

   Swatches in the selected color appear under **Preview**.

5. Click **OK** to close the **Choose Background Color** window.

   In **Edit Audio Scale**, the corresponding button and the corresponding part of the audio monitor preview show the selected color.

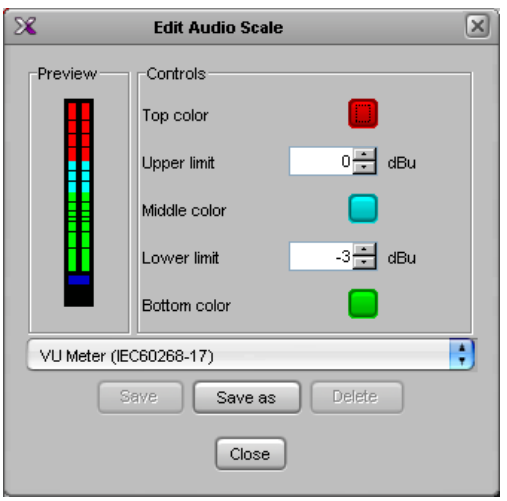
6. Repeat the procedure until all three colors are set as desired.
7. Enter the audio thresholds in **Upper limit** and **Lower limit**.
8. Type a name for the new audio scale in the box at the bottom, and then click the **Save as** button. Alternatively, if you are modifying an existing custom audio scale, you can click the **Save** button.

Configuring an Audio Scale From a Specific Audio Monitor

To configure an audio scale from a specific audio monitor:

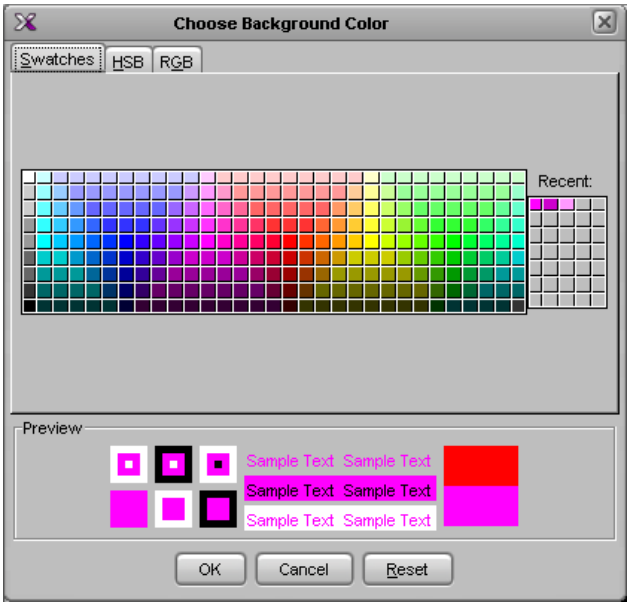
1. In the **Layouts** tab, click the audio monitor you wish to configure.
2. In the **Properties** pane, click the **Audio scale** box, under **Appearance**, and then click the button that appeared at the end of the box.

   The **Edit Audio Scale** window appears:



3. Click one of the **Top**, **Middle** or **Bottom Color** buttons to set the top, middle and bottom color.

   The **Choose Background Color** window appears:



4. Click the appropriate color square.

   Swatches in the selected color appear under **Preview**.

5. Click **OK** to close the **Choose Background Color** window.

   In **Edit Audio Scale**, the corresponding button and the corresponding part of the audio monitor preview show the selected color.

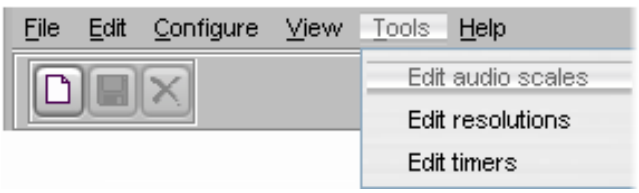
6. Repeat the procedure until all three colors are set as desired.
7. Enter the audio thresholds in **Upper limit** and **Lower limit**.
8. Type a name for the new audio scale in the box at the bottom, and then click the **Save as** button.

> **Note:** When you modify one of the default audio scales, you can only save your changes as a new audio scale. On the other hand, custom audio scales can be tweaked and saved repeatedly until the desired configuration is achieved.

Removing Audio Scales From the System

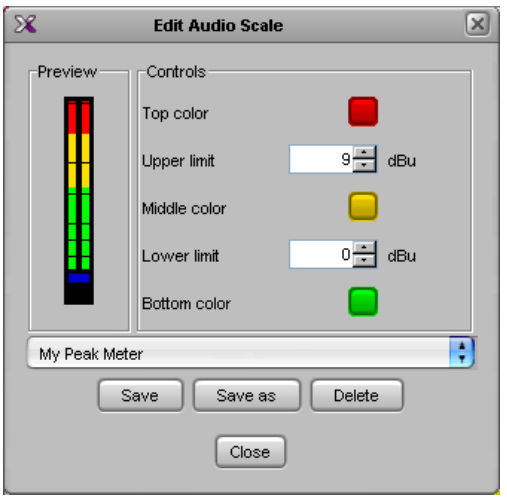
To remove a custom audio scale from the system:

1. On the **Tools** menu, click **Edit audio scales**:



   The **Edit Audio Scale** window appears.

2. In **Edit Audio Scale**, select the custom scale you wish to remove, from the list at the bottom of the window, and then click **Delete**:



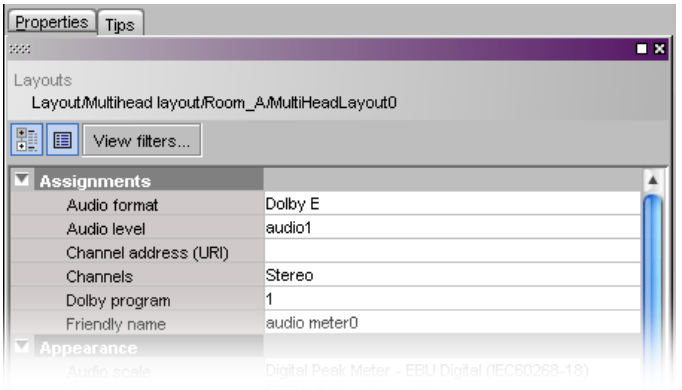
> **Note:** The default audio scales cannot be removed from the system.

Configuring Audio Metadata

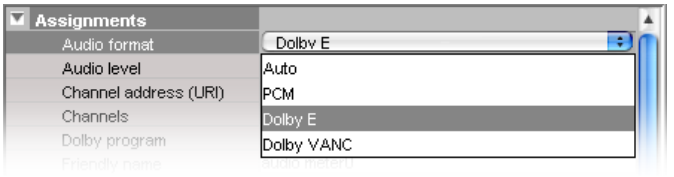
> **Note:** To decode Dolby E audio metadata, the *Dolby E* option (KXS-DolbyE) is required. See "Enabling Options" on page 371, for more information.

To configure audio metadata:

1. In XEdit, under the **Layouts** tab, select the audio monitor for which you wish to apply audio metadata settings, then click the **Properties** tab:

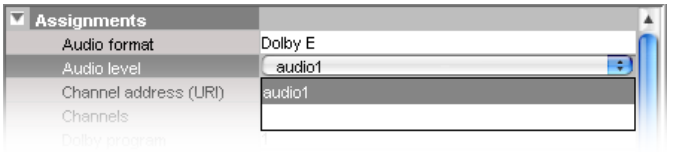


2. Choose the source associated with this audio monitor from the **Audio format** list (Auto, PCM, Dolby E or Dolby VANC):

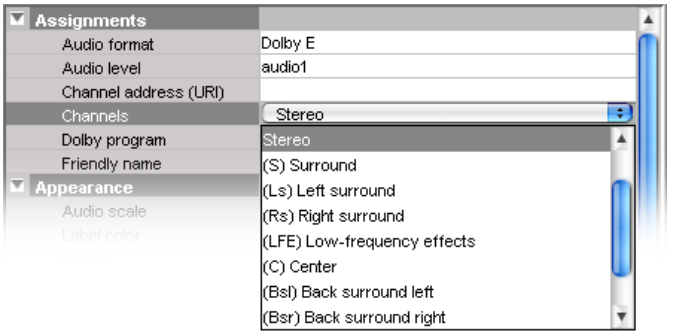


Note: If the actual audio source assigned to this audio monitor is not of the same format configured here, then the audio data will not be shown.

3. Choose an **Audio level**:

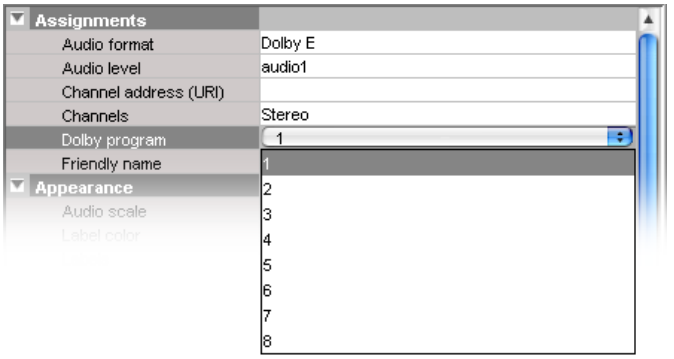


4. Choose a value from the **Channels** list to indicate which channel to display:



   – If the **Audio format** is set to **PCM**, then the available choices are *left*, *right* and *stereo*.
   – If the **Audio format** is set to **Auto**, **Dolby E** or **Dolby VANC**, then the available choices are *left, right, stereo, surround, left surround, right surround, LFE, center, left back surround, right back surround, left extra* and *right extra*.

5. Choose a **Dolby program**:



6. Specify a **Friendly name**.

7. Click the **Save** button.

Configuring Timers

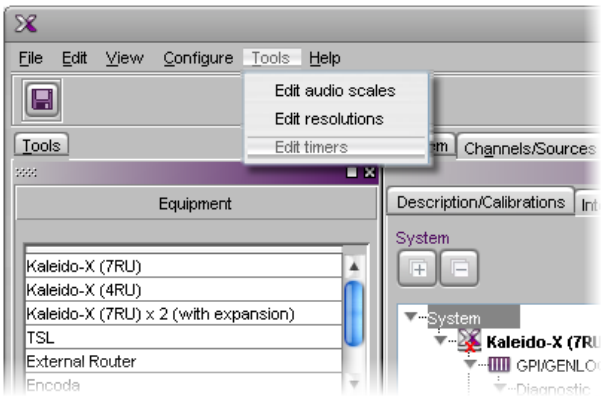
Building a countdown timer involves defining the timer itself (name, behavior, time reference, etc.), and then creating one or more timer monitors to display the timer on a monitor wall. Timers can be created, modified, deleted, added to a layout, assigned to logical sources, rooms or individual RCP users, and controlled from the Kaleido-RCP2.

> **Note:** In addition to timer monitors, Gateway commands can be used to interact with timers. Refer to the *Kaleido Remote Control Protocol (Gateway)* guide for details.

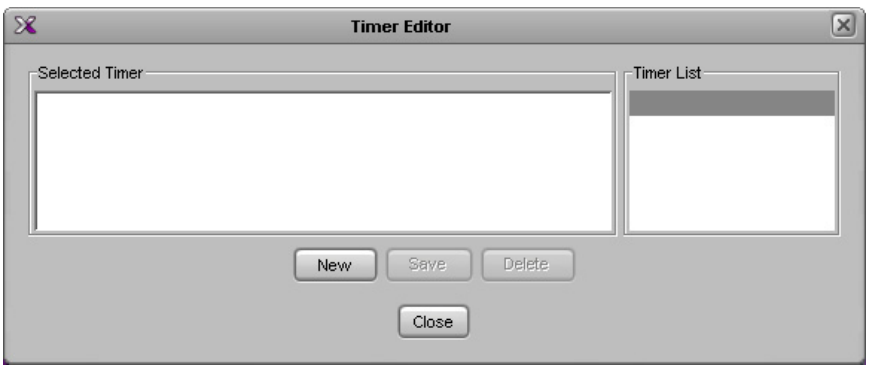
Adding Timers to the System

To define a timer:

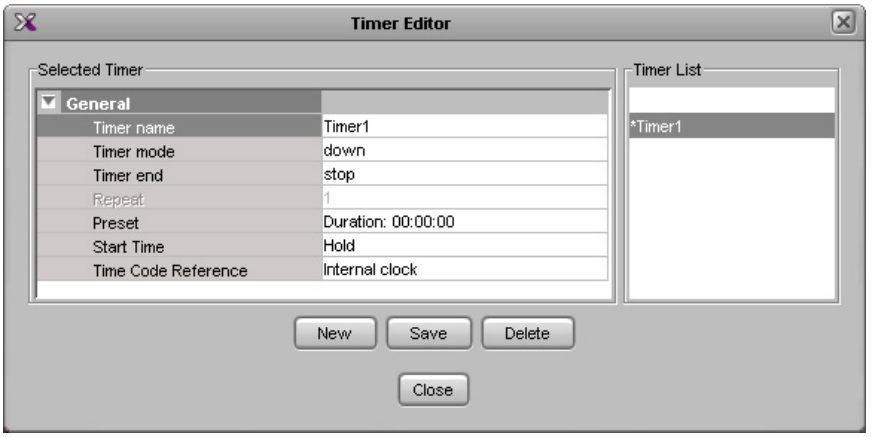
1. On the **Tools** menu, click **Edit timers**:



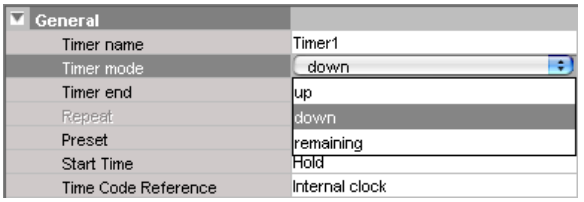
2. In **Timer Editor**, click **New**:



3. Type a name for your new timer in the **Timer name** box:

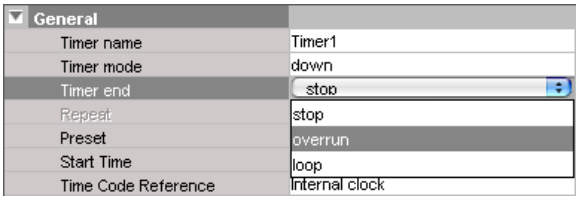


4. Choose the appropriate mode, from the **Timer mode** list:



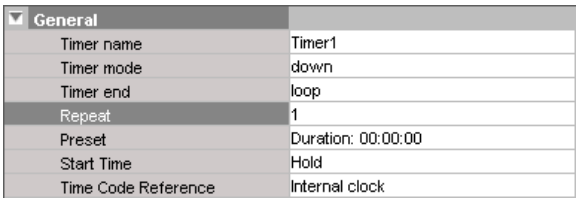
   - **Up**: The timer counts up starting from zero up to the Preset time.
   - **Down**: The timer counts down from the Preset time to zero.
   - **Remaining**: The timer counts down from the current time until it reaches the Preset time. This mode is a one-shot mode—the timer will not automatically restart the next day at the same start time. To restart it, you must either reset the timer monitor on the monitor wall, or set and specify a new start time.

5. Choose what happens when the timer reaches the end of its countdown period, from the **Timer end** list:

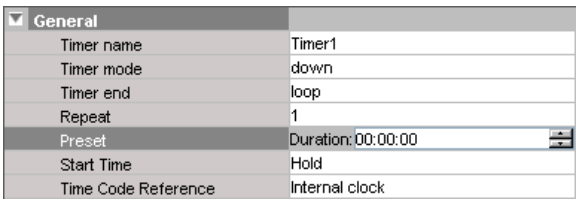


   - **Loop**: The timer restarts and repeats its cycle (not available with the **Remaining** timer mode).
   - **Stop**: The timer stops.
   - **Overrun**: The timer counts through its specified end point, and then continues (when **Overrun** is specified, the timer always counts up).

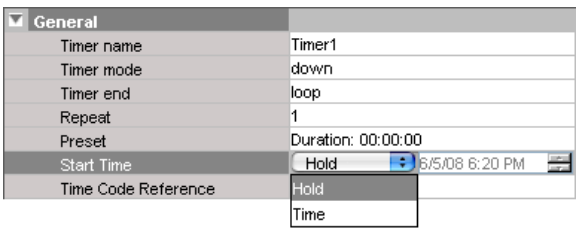
6. If you chose **Loop** as a timer end mode, specify the number of times the loop should repeat:



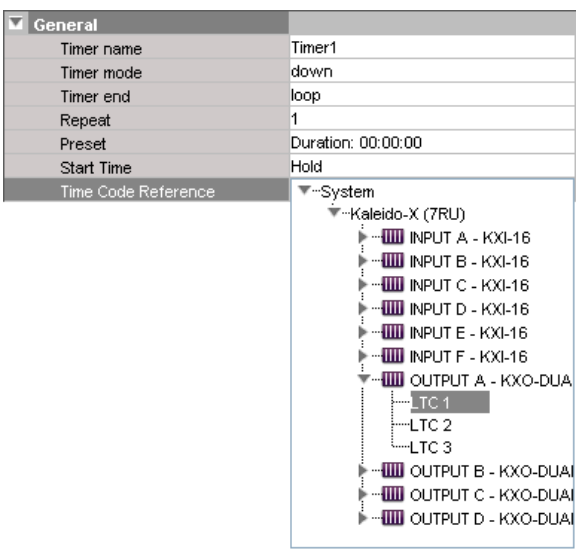
7. Specify a **Preset** duration:



8. Specify a **Start time**:



9. Choose a synchronization source from the **Time code reference** list— either an embedded time code signal from a video source, an LTC input (if available), or the internal clock time (default):



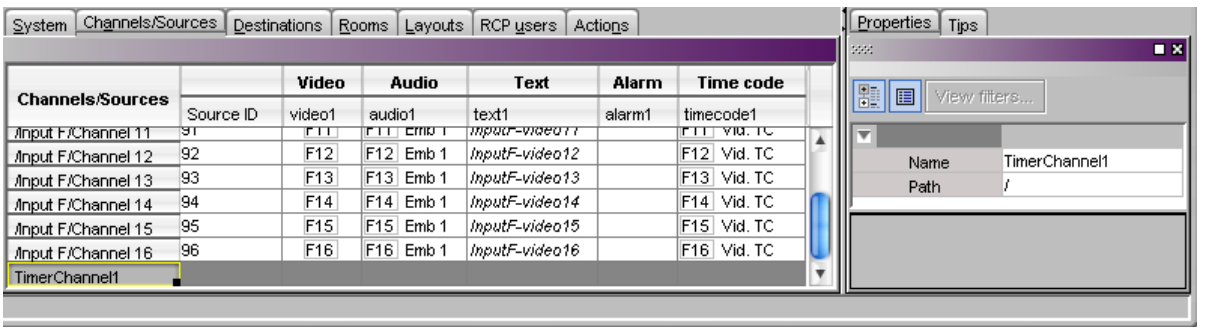
IMPORTANT: **Before setting a timer's start time in XEdit, review the following:**

- If the selected time code reference *includes time zone information,* then make sure that the PC or laptop that has XEdit is configured for the same time zone.

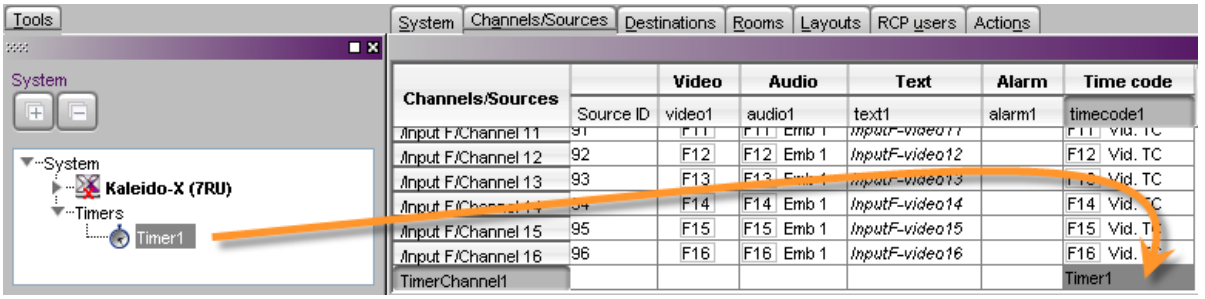
- If the selected time code reference *does not include time zone information,* or you chose to bind the timer to the multi-viewer's *internal clock,* then the multi-viewer's system time will apply.
  - In the case of a Kaleido-X or Kaleido-X16 multi-viewer model, make sure the time zone settings are the same, on the multi-viewer, and on the PC or laptop that has XEdit.
  - In the case of a KMV-3901/3911, when you save or export the timer to the multi-viewer, XEdit automatically converts the start time you specified to UTC, based on your computer's time zone settings.

Note: In the case of a Kaleido-X or Kaleido-X16 multi-viewer model, the system's time zone is configured in XAdmin. In the case of a KMV-3901/3911, time is always based on UTC. On a Windows PC or laptop, the time zone is configured in the Date and Time control panel.

10. Click **Save** to save your new timer and close the **Timer Editor** window.
11. Under the **Channels/Sources** tab, create a new logical source to associate with the timer, and name it:



12. Click a cell in the time code level of the new logical source, and drag the timer you wish to assign to this logical source from the filtered System list that appears in the **Tools** pane, to the selected cell in the sources table:

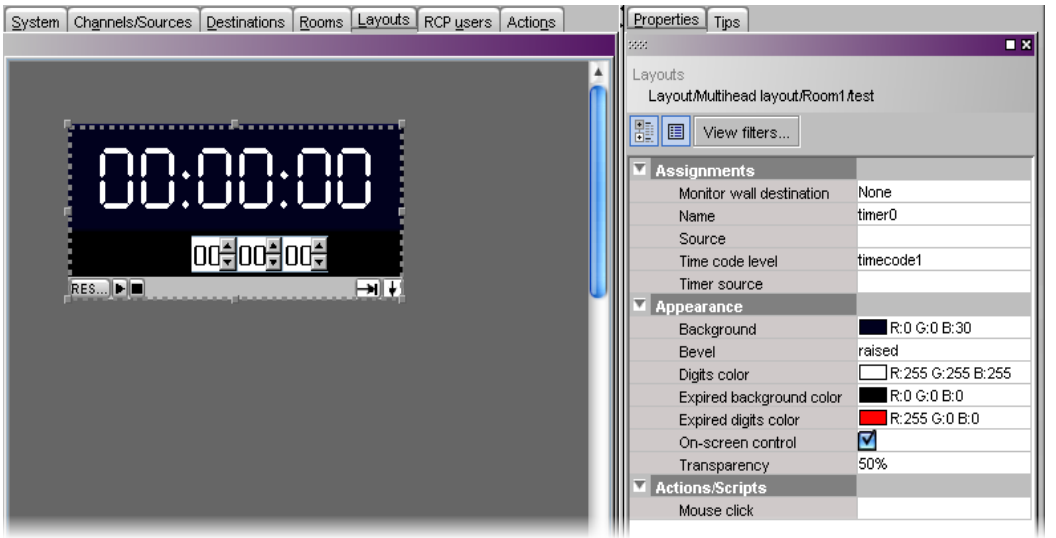


13. Click **Save**.

Adding a Timer Monitor to a Layout

To create a timer monitor:

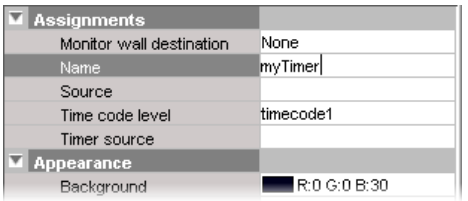
1. In XEdit, open a layout and click the Timer button .
2. Click and drag to draw a timer monitor on the layout:



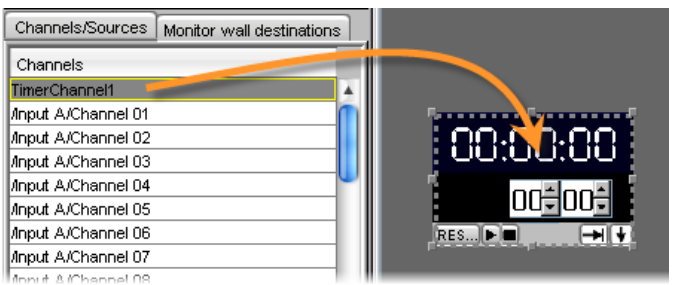
Alternatively, you can drag a timer monitor from the Timers library to the layout.

The timer's attributes appear in the **Properties** pane.

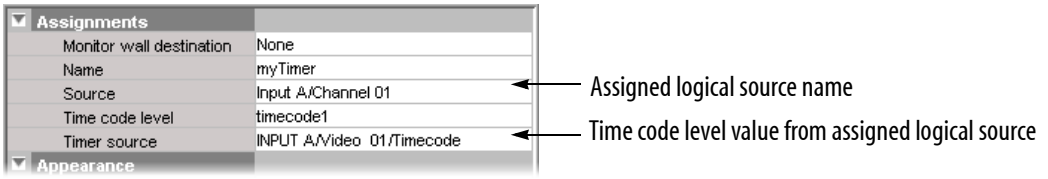
3. Replace the default name, by typing a new name in the **Name** box:



4. If you wish to assign a logical source, drag the appropriate element from the **Channels/Sources** list that appears in the **Tools** pane, to the timer monitor:

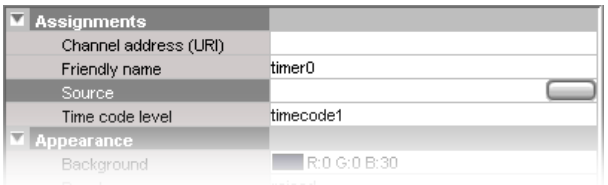


The selected logical source's name appears in the **Source** box, and the **Timer source** box shows the value of the corresponding time code level:



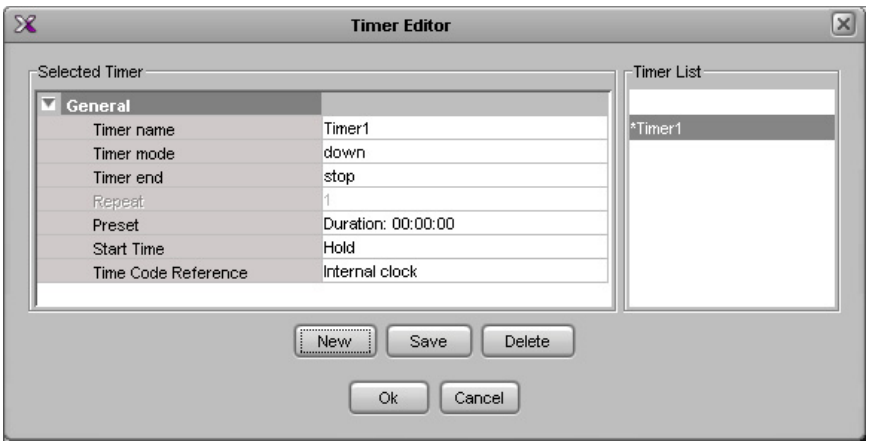
Note: The first time code level applies by default. If your system's logical sources include more than one time code level, select the one you wish to apply from the **Time code level** list.

5. Click the button beside **Timer source**:



The **Timer Editor** window appears.

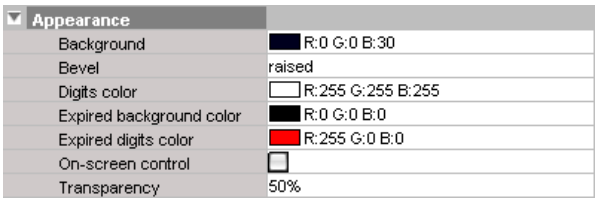
6. Choose a timer (see page 207) from the **Timer List**:



It is also possible to assign a timer to a timer monitor by dragging an existing logical source (containing a timer assignment) to the monitor.

Note: Each timer monitor is assigned to exactly one timer. Multiple timer monitors can be assigned to the same timer. Start/stop/reset or mode changes applied to one monitor affect all other monitors assigned to the same timer.

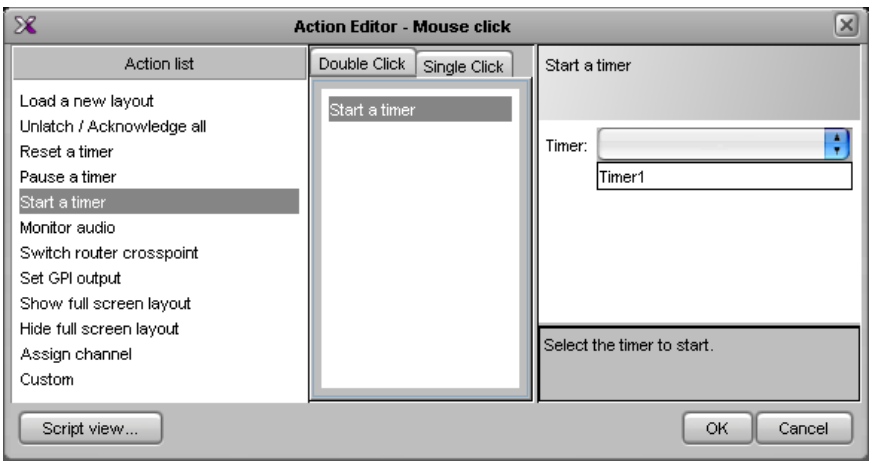
7. Click **Save**.
8. Modify the timer's **Appearance** properties as needed:



9. To attach an action to the timer, click the button beside **Mouse click**:

The **Action Editor** window appears.

10. Drag an action from the left pane to the middle pane, then specify the action's behavior in the right pane:



> **Note:** For more information on creating actions, refer to "Creating Actions" on page 237.

11. Click **OK** to save the action assignment and close the **Action Editor** window.
12. Click **Save** to save the layout with the new timer monitor.
13. Export the database to a Kaleido-X, and load the layout.

The interactive timer monitor appears on the Monitor Wall.

> **Note:** See "Using Timers" on page 53, "Assigning a Timer to a Room" on page 255, and "Assigning a Timer to an RCP User" on page 260, for more information.

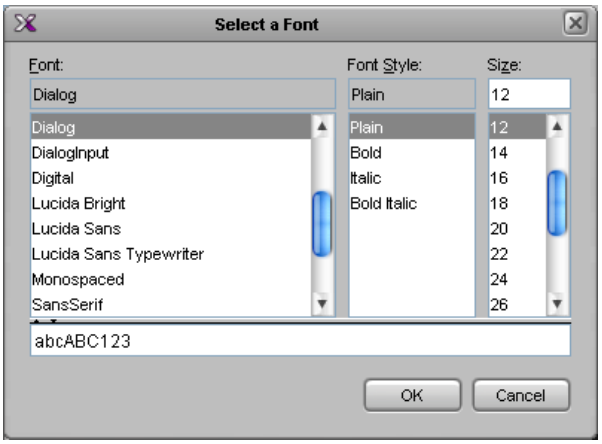
Configuring UMDs

Setting the text font

To set the text font for a UMD:

1. In the **Layouts** tab, click the UMD whose text font you wish to set.
2. In the **Properties** pane, click the **Text font** box, under **Appearance**, then click the button that appeared at the end of the box.

   The **Select a Font** window appears:



3. Select the appropriate values from the **Font**, **Font Style** and **Size** lists.
4. Click **OK**.

Setting a static UMD Text

To configure static text for a UMD:

1. In the **Layouts** tab, double-click the UMD whose static text you with to set.
2. Make sure the appropriate input language and method are set in your operating system.
3. Type the desired static text.

To configure static UMD text from the sources table:

1. In the **Channels/Sources** tab, click the cell that corresponds to the appropriate text level of the logical source that is assigned to the UMD whose static text you with to set.
2. Type the new static text.

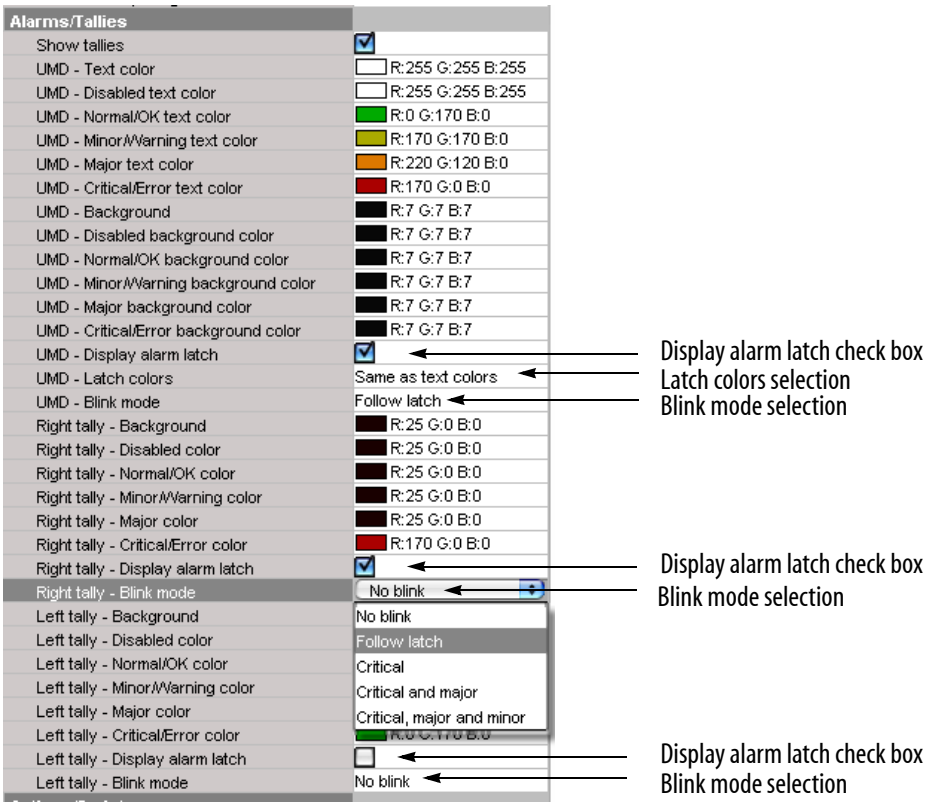
Configuring a UMD's Alarm Reporting Behavior

To prevent users from missing temporary alarms on the monitor wall, monitors that are capable of displaying an alarm status (e.g. video monitors, UMDs, alarm monitors) can be configured with a latching

mechanism. An alarm latch will keep the error state visible until someone acknowledges the associated alarm. For UMDs, the latch color can be set to follow the background or the text color configuration.

To set the alarm reporting features for a UMD (text and tallies):

1. In XEdit, open a layout and click the UMD whose alarm reporting behavior you wish to configure.
2. In the **Properties** pane, scroll down to the **Alarms/Tallies** section, to set the appropriate text and background color scheme.



3. Click the **Blink mode** boxes, and then select the appropriate blinking behavior, for your purposes:

Blink mode	Description
Off	The status indicator will never blink.
Follow latch	The status indicator's blinking will follow the latch status. The indicator will blink until someone unlatches the alarm.
Critical	The status indicator will blink when the current status is critical.
Critical and major	The status indicator will blink when the current status is critical or major.
Critical, major and minor	The status indicator will blink when the current status is critical, major or minor.

4. Select the **Display alarm latch** check box to enable the latched status indicators.

Configuring Alarm Monitors

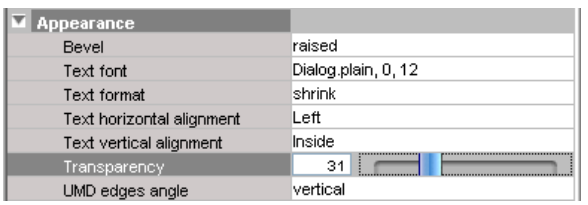
To add an alarm monitor to a layout:

1. Click the Alarm monitor button ( ) on the toolbar, click the layout, and then move or resize the monitor as needed.

   You may choose to layer this monitor on top of the video window within a composite. See "Working with Composite Monitors" on page 225, for instructions on how to add elements to a composite.

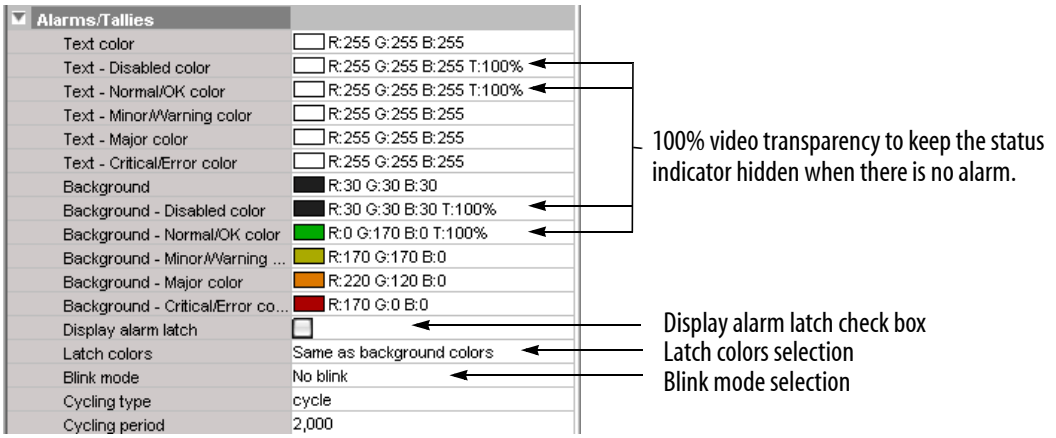
> **Note:** On the monitor wall, an alarm monitor positioned over a video window has the following default behavior:
>
> - If the source assigned to the alarm monitor is an active alarm (red), the alarm monitor is visible. The video transparency settings configured in XEdit for this alarm monitor apply to the part of the monitor that overlaps the video window.
> - If the source assigned to the alarm monitor is an inactive alarm (green), the alarm monitor is not visible on the monitor wall. If the alarm monitor partially overlaps the video window, then the part of the monitor that does not cover the video window remains visible (green).

2. In the **Properties** pane, set the transparency attribute to the appropriate value for your purposes, by clicking the **Transparency** box, and then using the slider or typing the desired value directly into the box.



   Set the other appearance attributes as desired.

3. In the **Alarms/Tallies** section, set the appropriate color and video transparency scheme for the text and background, to achieve the desired alarm reporting behavior.

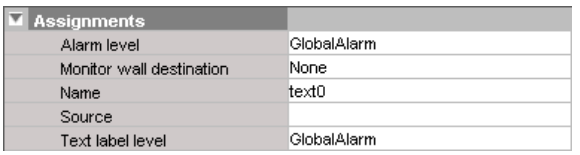


4. Click the **Blink mode** box, and then select the appropriate blinking behavior, for your purposes:

Blink mode	Description
Off	The status indicator will never blink.
Follow latch	The status indicator's blinking will follow the latch status. The indicator will blink until someone unlatches the alarm.
Critical	The status indicator will blink when the current status is critical.
Critical and major	The status indicator will blink when the current status is critical or major.
Critical, major and minor	The status indicator will blink when the current status is critical, major or minor.

5. To enable the latched status indicators, select the **Display alarm latch** check box, click the **Latch colors** box, and then select the appropriate color scheme for your purposes: either **Same as text colors**, or **Same as background colors**.
6. Choose from two display modes: **Cycle** and **Marquee**.

   In cycle mode, the alarm monitor displays text from each alarm, one after the other. In marquee mode, the alarm text scrolls across the monitor. In addition, you can control the cycling speed and the scroll rate by setting the cycling period, in milliseconds.
7. Make the appropriate assignments (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182), and select the desired alarm and text label levels, if necessary.

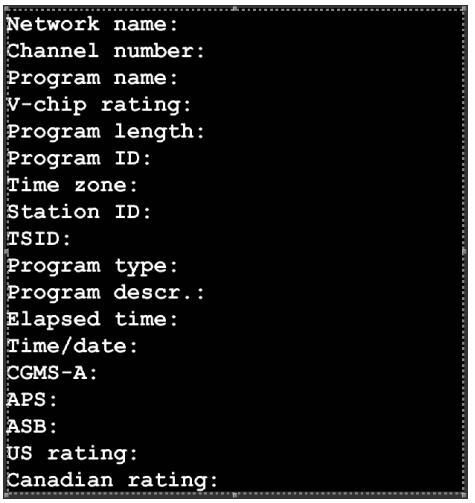


8. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Configuring Metadata Monitors

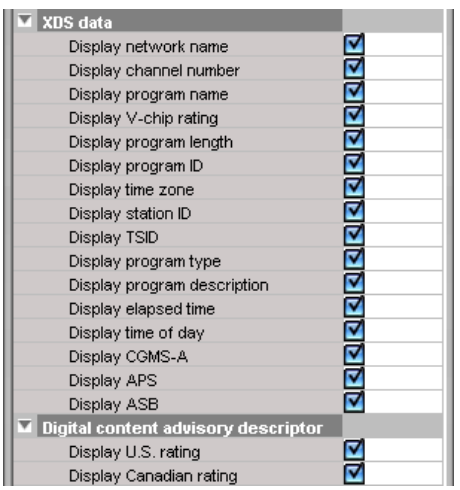
To monitor XDS Data and digital content advisory descriptors:

1. Click the Metadata monitor button ( ) on the toolbar, click the layout, and then move or resize the monitor as needed.

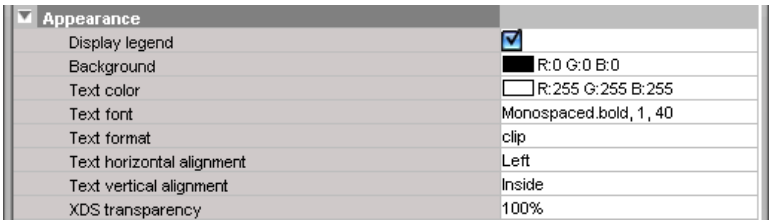


   Alternatively, you may choose to layer this monitor on top of the video window within a composite. See "Working with Composite Monitors" on page 225, for instructions on how to add elements to a composite.

2. In the **Properties** pane, select the check boxes that correspond to the data elements you wish the monitor to display.

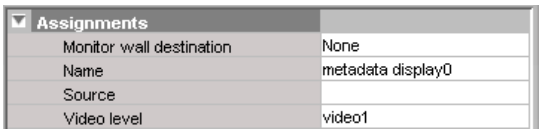


3. You can also set appearance properties, including the font and size of the text labels, or choose not to display the labels by clearing the **Display legend** check box.



The selected monitor is updated accordingly on the layout.

4. Make the appropriate assignments (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182) and select the desired video level, if necessary.



5. Click the Save button on the toolbar.

Configuring V-Chip Monitors

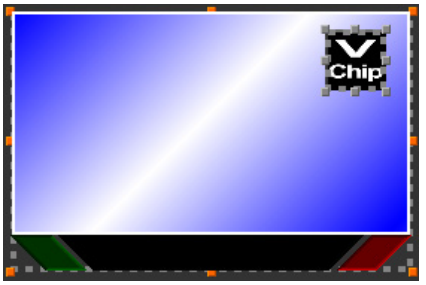
A V-chip monitor provides a visual indication of the V-chip rating from the CC (608) metadata in an SD video signal, or from the CC (608) legacy caption data when such data is present within an HD video signal.

> **Note:** Extraction of CC (608) captions and CC (608) legacy captions is available with the *Extraction of CC, Subtitling and XDS metadata* option (KXS-CSX).

To add a V-chip monitor to a layout:

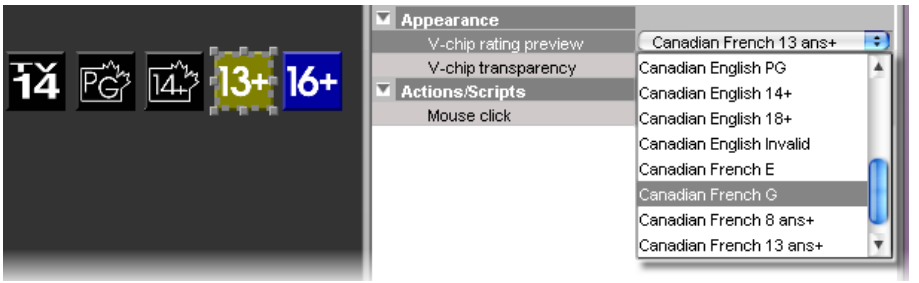
1. Click the V-chip monitor button ( ) on the toolbar, click the layout, and then move or resize the monitor as needed.

   You may choose to layer this monitor on top of the video window within a composite. See "Working with Composite Monitors" on page 225, for instructions on how to add elements to a composite.



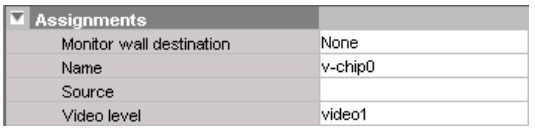
2. In the **Properties** pane, set the transparency attribute to the appropriate value for your purposes, by clicking the V-chip transparency box, and then using the slider or typing the desired value directly into the box.

3. If you wish to preview the logo associated with a specific V-chip rating, select it from the **V-chip rating preview** list. For example:



> **Note:** As its name implies, the V-chip rating preview is only a preview, and its value is not saved with the layout.

4. Make the appropriate assignments (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182), and select the desired video level if necessary.



5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

> **Notes**
>
> - Unlike alarms, the V-chip rating associated with a video signal that is currently monitored on the monitor wall is not relayed to the XEdit user interface, when working in online mode.
> - The V-chip monitor uses the holding time configured with the **XDS filtering** calibrations for the associated video source (see "Calibrating Metadata Holding Time" on page 113). Once the specified holding time has expired, the V-chip monitor displays the N/A logo:
>
>
>
>
> - When V-chip data cannot be extracted from the current video signal, the V-chip monitor displays the N/A logo.

Configuring Clocks

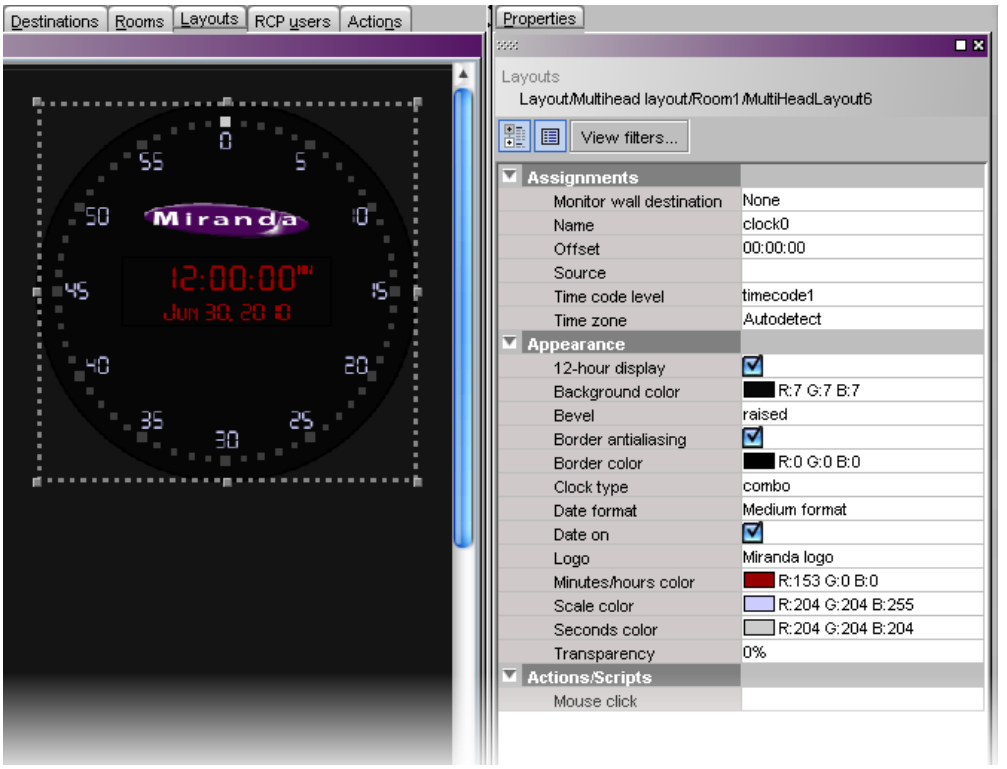
In addition to the default combo-type clock that can be added to a layout by using the Clock button ( ) on the toolbar, the predefined widget library includes a selection of analog and digital clocks.

Notes

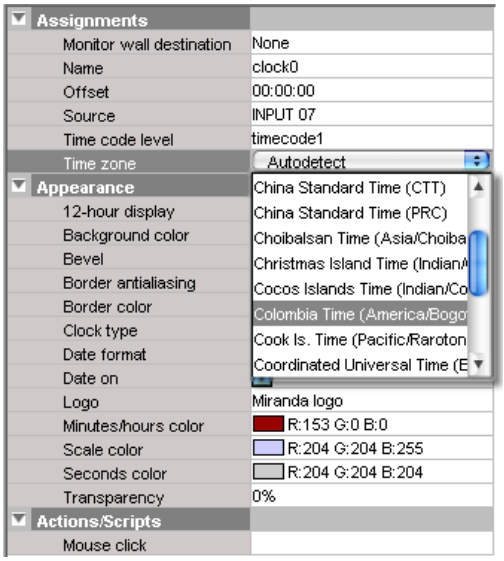
- The KMV-3901/3911 multi-viewer does not support analog clocks.
- In the case of a KMV-3901/3911, the system time is always based on UTC. However, if you wish to see the time from different time zones on the monitor wall, you can configure different clocks accordingly.

To configure a clock:

1. In the **Layouts** tab, click the clock you wish to configure:



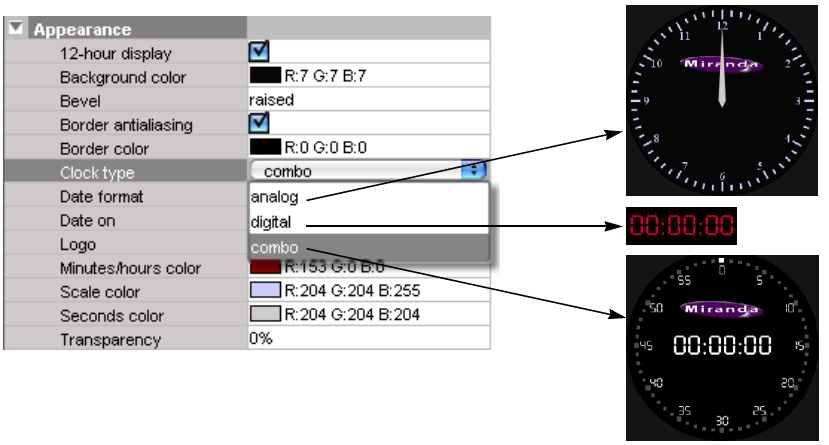
2. In the **Properties** pane, make the appropriate assignments.
   - Determine the time source (see "Assigning Logical Sources or Monitor Wall Destinations to Monitors" on page 182), and select the desired time code level if necessary.
   - Select the appropriate time zone for your purposes:



If you select **Autodetect**, then the clock will use the time zone from the assigned source, based on the following rules:

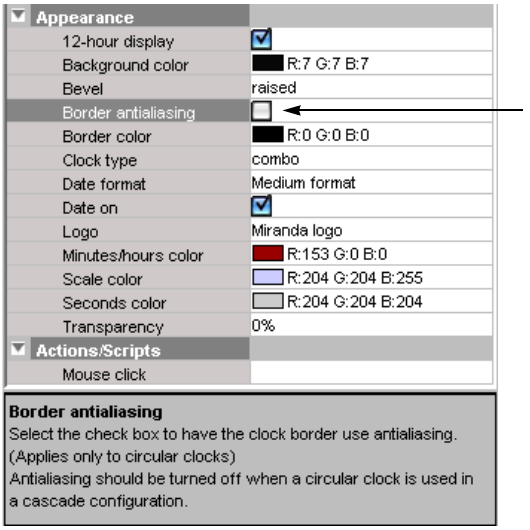
- If the clock is bound to an LTC or DVITC time code that includes time zone information, then the time zone is decoded from the time code.
- If the clock is bound to the system time, or to an LTC or DVITC time code that *does not* include time zone information, then:
  - in the case of a Kaleido-X or Kaleido-X16 multi-viewer model, the time zone configured in XAdmin applies;
  - in the case of a KMV-3901/3911, time is always based on UTC.

3. Modify the clock's **Appearance** properties as needed.
   - From the **Clock type** list, select between a digital, an analog or a combo-type clock:



   - Resize the clock as needed, set color attributes and select the appropriate date and time formats. In the case of an analog or combo-type clock, you can also add a clock logo (see "Inserting a Clock Logo" below).

– In the case of an analog or combo clock, if the clock is to be displayed against a pink background—RGB (255, 0, 255) or similar—, or if the current layout belongs to a cascade room (see page 65), then make sure to clear the **Border antialiasing** check box:



In such cases, if border antialiasing remains enabled, the clock will have a pink outline on the monitor wall.

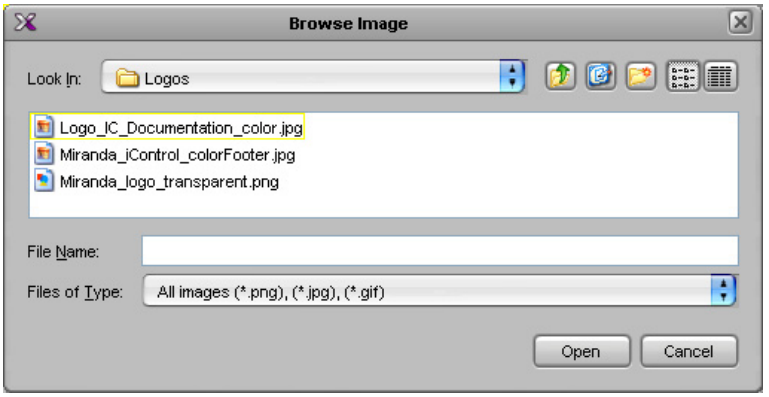
4. Define actions associated to this layout element (see "Creating Monitor Wall Actions" on page 239).
5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Inserting a Clock Logo

To insert a clock logo:

1. Click the **Layouts** tab, and open the layout that contains the clock whose background logo you wish to set.
2. Click the clock.
3. In the **Properties** pane, click the **Logo** box, under **Appearance**.
4. Click the button that appeared at the end of the box.

   The **Select Image** window appears.
5. If the image you wish to use is not already listed in **Select Image**, then click the **Open** button to open the **Browse Image** window. Locate the image, select it, and then click **Open**:



6. Select the **Logo** you wish to use.

> **Note:** The maximum size for each image is 256 KB, and the maximum overall size (for all images) is 10 MB. The image can be in PNG, GIF, or JPEG format. Images can be used on multiple layouts and only need to be imported to the database once.

7. Click **Open**.

   The image is imported into the database.

8. In **Select image**, select the image file from the **Image selection** list, and then click **OK**:

   The Logo appears under Preview.

9. Click **OK**.

The logo appears on the clock background.

Working with Composite Monitors

Creating a Composite

Composite monitors encapsulate a number of primary elements (e.g. a video monitor, one or two audio monitors, a UMD, and a time code) that can then be managed as a single object. The following example outlines the basic rules to follow, in order to create composite monitors that can be resized elegantly.

To create a composite monitor:

1. Open an existing layout or create a new one.
2. Click the Composite button on the toolbar, and then click the layout. Resize the empty composite box approximately, to a size that will be appropriate for the display where it is to appear:

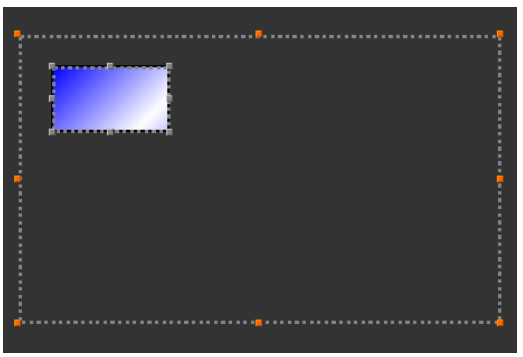
Empty composite

3. Right-click the empty box, and then click **Unlock** on the shortcut menu. Alternatively, click the box, and then press F2. Notice that the handles around the box boundary line become orange:

Unlocked empty composite

Note: If you double-click a composite monitor, the handles also become orange. However, in such a case, you cannot add, move, or resize individual components within the composite; you can only edit each existing components' properties.

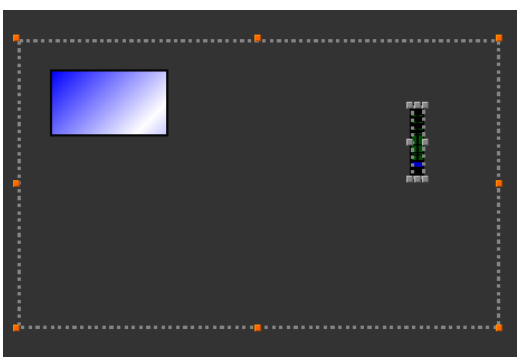
4. Add a monitor to the composite, either using a button on the toolbar or dragging an element from a widget library. For example, click the Video monitor button on the toolbar, and then click inside the composite to add a video monitor:



Video monitor within unlocked composite

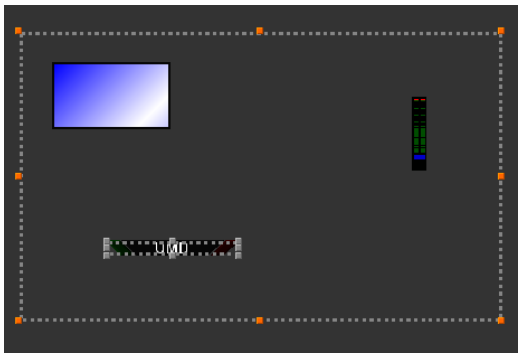
Note: Only primary monitors (not composite) can be part of a composite.

5. Click the Audio monitor button on the toolbar, and then click inside the composite to add an audio level meter:



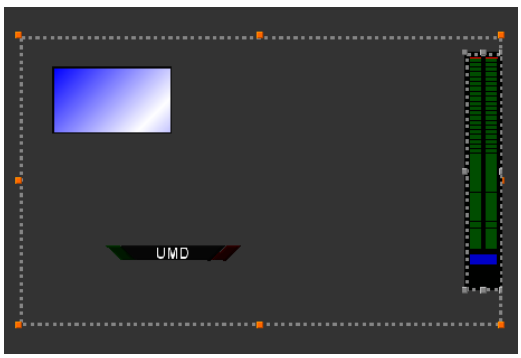
Audio level meter within unlocked composite

6. Click the UMD button on the toolbar, and then click inside the composite to add a UMD:



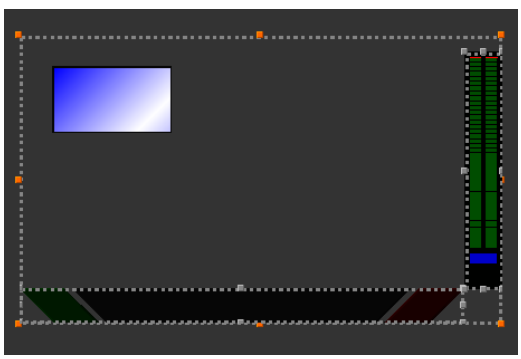
UMD within unlocked composite

7. Move the audio level meter *to the very edge* of the composite, using the mouse and then finishing with the arrow keys, and resize it as appropriate:



Audio level meter resized and moved to the side

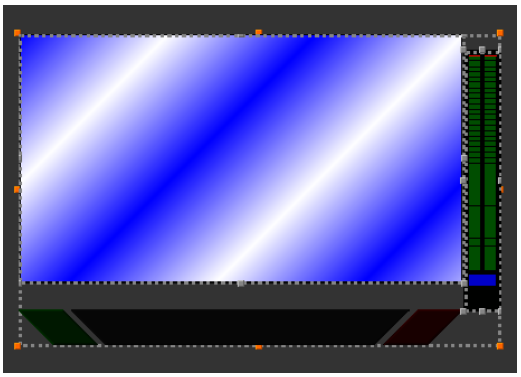
8. Move the UMD *to the very bottom* of the composite, using the mouse and then finishing with the arrow keys, and resize it if needed:



UMD resized and moved to the bottom, with its upper right handle matching the audio level meter's lower left handle

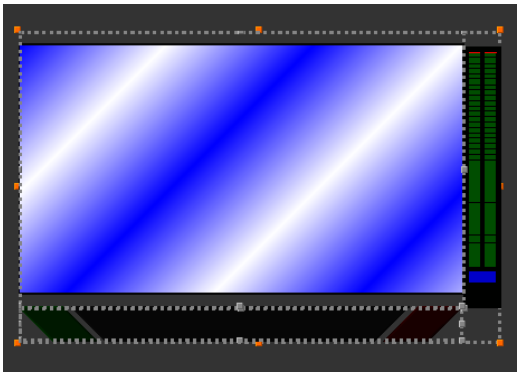
Note: To align a monitor more precisely against another, select one of them, and then click the second one while holding the Shift key. It is then possible to drag any of the sizing handles (the larger grey dots) to resize any of the selected monitors, while their relative position remains visible. Whenever appropriate, matching adjacent monitors' corner or center handles together will help achieve a composite that can be resized elegantly.

9. Move the video monitor to the top-left corner of the composite, then click its bottom-right corner handle, and drag it to stretch the video until one of its dimensions completely fills the empty area (vertically or horizontally):



Video monitor stretched to fill the remaining horizontal area

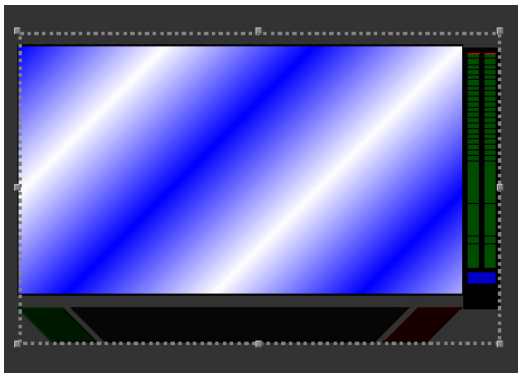
10. Drag the video monitor's bottom-center handle until it meets the UMD's bounds:



Video monitor stretched vertically with its bounds matching the UMD's

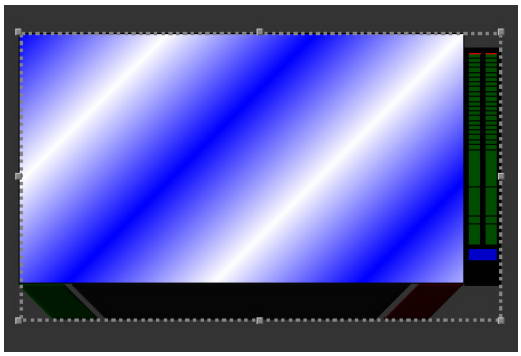
Note: Resizing the video monitor is easier with the UMD's bounds visible: first click the video monitor and then click the UMD while holding the Shift key.

11. Adjust the size and position of the components some more if needed, making sure to keep the peripheral monitors at the very edges of the composite's boundary box, while minimizing empty space within the composite.
12. Click outside the composite to lock it:



Locked composite

13. Drag the composite's top or bottom center handle inwards, until there is no more empty space above and below the video monitor:



Composite resized to remove remaining empty space around video monitor

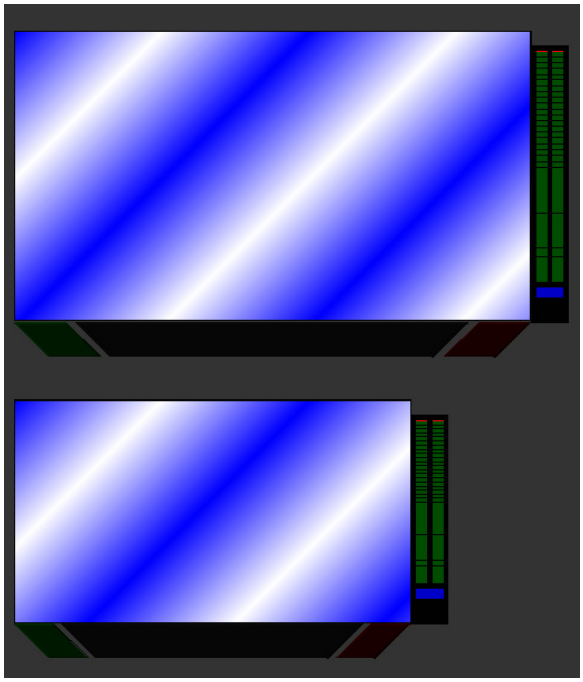
14. To be able to reuse the new composite in other layouts, drag it onto the appropriate widget library while *holding the Ctrl key*. See "Creating a Widget Library" on page 234 for more information.
15. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Resizing a Composite

To resize a composite:

- Click the composite, and drag any of its *corner* handles outwards or inwards.

  The composite expands or shrinks while its individual elements maintain their relative position and aspect ratio:



Larger and smaller copies of the original composite

Individual monitors within a composite are resized according to the following rules:

- Video monitors are scaled proportionally, in both width and height.
- Vertical audio monitors are scaled vertically, but their width does not change.
- Horizontal audio monitors, time codes, timers, and UMDs are scaled horizontally, but their height does not change.
- Clocks are not resized.

The following table summarizes these rules:

Monitor type	Height	Width
Video	Scalable	Scalable
Vertical audio monitor	Scalable	Fixed
Horizontal audio monitor, UMD, time code, timer	Fixed	Scalable
Clock	Fixed	Fixed

Using the Region Editor

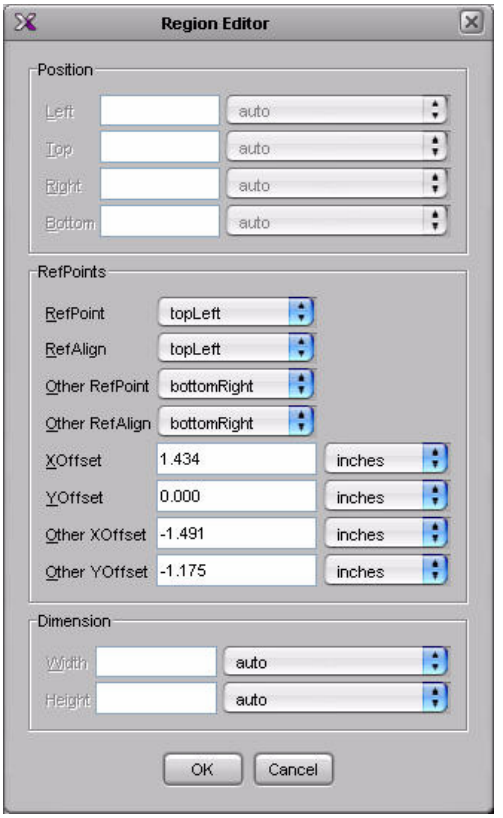
Opening the Region Editor

> **Note:** The region editor is part of the expert view. To show the expert view, click the **View filters** button on the **Properties** pane's toolbar, and then select the **Expert view** check box. Using the region editor is not recommended. To accomplish most configurations, the standard tools available in the layout editor are sufficient.

To open the region editor:

1. Click the monitor whose properties you wish to see.
2. In the **Properties** pane, click the **Bounds** box, under **Size & Position**.

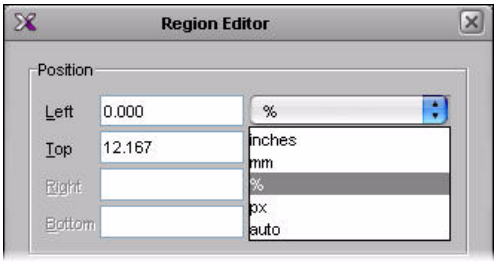
   Click the button that appeared inside the box to open the **Region Editor** window:



Configuring a Monitor's Position Using the Region Editor

To set a monitor's position on the layout:

1. For each position, first select the appropriate unit:



2. Type values in the **Left**, **Top**, **Right**, and **Bottom** boxes, relative to the upper-left corner of the display.
3. Click **OK** to close the editor.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Configuring a Monitor's Dimensions Using the Region Editor

To configure a monitor's dimensions:

1. For each dimension, first select the appropriate unit:

2. Type values in the **Width** and **Height** boxes.
3. Click **OK** to close the editor.
4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Format Painting

Copying Properties from one Monitor to Another

Every monitor in a layout has properties related to its appearance that can be configured by the user, in the Properties pane. The Copy properties tool copies most of these properties from one monitor *to another of the same type* (e.g. audio monitor to audio monitor, clock to clock, etc.).

> **Note:** The **Copy properties** tool does not copy the assignments from one monitor to another, and it does not copy the size from one monitor to another.

To use the Copy properties tool:

1. In the **Layouts** tab, click the monitor whose properties you wish to copy to another monitor of the same type.

The monitor's boundary box appears.

The Copy properties button becomes available on the toolbar.

2. Click the Copy Properties button to switch into format-painting mode.
3. Point to another monitor of the same kind in the layout.

   The pointer changes to a pointing finger, indicating that the properties of the first monitor (whose boundary box is still shown) can be copied onto the monitor beneath the pointer.
4. Click the monitor beneath the pointer to copy the properties onto that monitor.

   Its appearance will change to reflect the new properties.

> **Note:** To have the width and height copied as well, press and hold the Ctrl key while clicking the monitor.

5. Repeat this for each monitor whose properties you wish to change.
6. Click the Select button on the toolbar to exit format-painting mode when you have finished.

Copying Size from one Monitor to Another

The size of every monitor in a layout can be adjusted by the user, by dragging handles on the boundary box that appears when the monitor is selected. The Copy size tool copies the size from one monitor *to another monitor of the same kind*.

> **Note:** The **Copy size** tool does not copy any other property from one monitor to another.

To use the Copy size tool:

1. In the **Layouts** tab, click the monitor whose size you wish to copy to another monitor of the same type.

   The monitor's boundary box appears.

   The Copy size button becomes available on the toolbar.
2. Click the **Copy size** button to switch into size-painting mode.
3. Point to another monitor of the same kind in the layout.

   The pointer changes to a pointing finger, indicating that the size of the first monitor (whose boundary box is still shown) can be copied onto the monitor beneath the pointer.
4. Click the monitor beneath the pointer to copy the size onto that monitor.

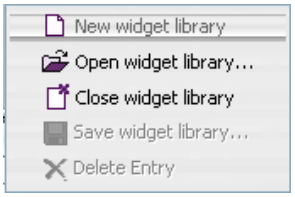
   Its size will change to match that of the first monitor.
5. Repeat this for each monitor whose size you wish to change.
6. Click the Select button on the toolbar to exit size-painting mode when you have finished.

Managing Widget Libraries

Creating a Widget Library

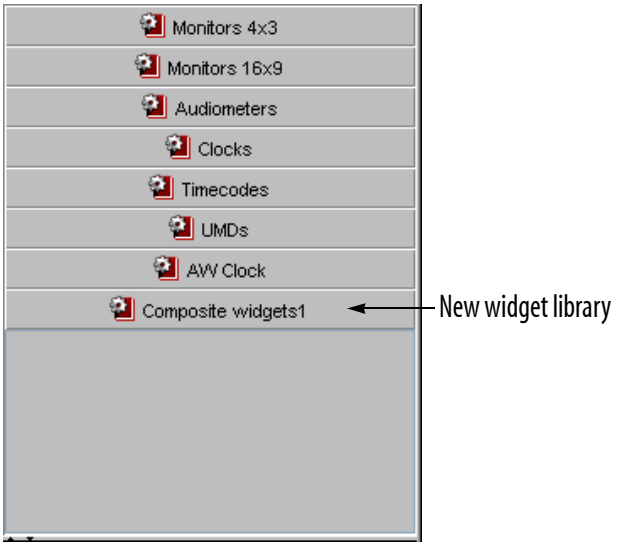
To create a widget library:

1. Click the **Layouts** tab.
2. Right-click inside one of the predefined widget libraries in the **Tools** pane, and then click **New widget library** on the shortcut menu. Alternatively, click **New widget library** on the **File** menu.



Widget-library shortcut menu.

The new widget library appears below the default widget library area in the **Tools** pane.

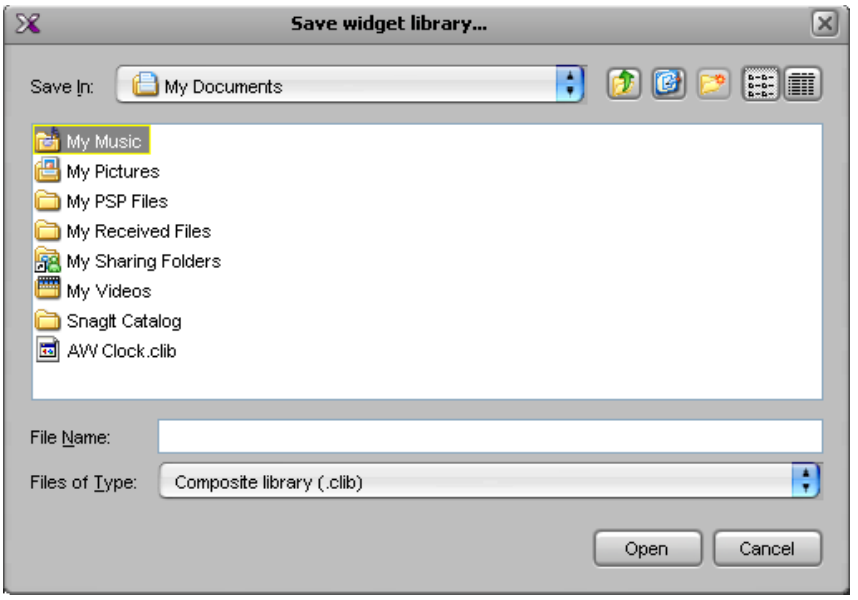


3. On the **File** menu, click **New**. Alternatively, click **Open** to open an existing layout.
4. Click the appropriate button on the toolbar, then click the layout to add a monitor of the selected type. Alternatively drag a monitor from one of the existing libraries onto the layout, or choose an existing monitor within the layout.
5. Customize the monitor if necessary, and then drag it onto the new widget library while *holding the Ctrl key*.

> **Note:** It is not possible to customize a monitor once it is inside a library.

6. Right-click anywhere inside the widget library, and then click **Save widget library** on the shortcut menu.

   The **Save Widget Library** window appears:



7. Type a name for the new custom widget library, and then click **Save**.

Closing a Widget Library

To close a widget library:

- Once the custom library is saved, you can right-click in the library area, and then click **Close widget library** on the shortcut menu. Alternatively, on the **File** menu, click **Close widget library**.

Opening a Widget Library

To open a custom library:

- Right-click inside one of the predefined widget libraries in the **Tools** pane, and then click **Open widget library** on the shortcut menu.
- On the **File** menu, click **Open widget library**.
- On the **File** menu, point to **Open recent**, and then select from the list of recently used widget libraries.

> **Note:** It is possible to have multiple custom libraries open at the same time.

10 Creating Actions

This chapter describes how to configure and trigger monitor wall actions, and background actions.

Overview

An action is an operation automatically performed in response to a specific trigger. A *monitor wall action* is directly associated with a monitor belonging to a specific layout and can only be activated when that layout is loaded on the monitor wall, whereas a *background action* can be triggered at any time by any alarm on the Kaleido-X. Unlike monitor wall actions, background actions are always available within a Kaleido-X system, regardless of what layouts are currently loaded. Examples of actions:

- Unlatch/Acknowledge all
- Load layout
- Assign logical source (channel)
- Set GPI output
- Show/Hide full screen layout
- Reset/Pause/Start a timer
- Monitor audio
- Switch router crosspoint
- Custom (JavaScript)

Background actions are configured using the XEdit application.

Key Concepts

Term	Description
Floating action	A background action
Layout	A group of monitors (or composite monitors) arranged for display on a monitor wall.
XAdmin	The application used to perform administrative functions (e.g. configure network settings) on a Kaleido-X.
XEdit	The application used to create and modify rooms, layouts and other components of a Kaleido-X monitoring system.
Composite monitor	A group of primary monitors.
Monitor	A graphical component used in the creation of a layout. Typical monitors include UMDs, time code monitors, audio monitors, video monitors, and clocks.
Action item	Action elements that are associated with a specific action (e.g. Load Layout, Set GPI Out, etc.).
System list	Refers to the hierarchical list visible under XEdit's System tab, which gives a virtual representation of the system hardware (i.e. Kaleido-X frame and peripheral devices).
Trigger	Refers to the event that causes an action to be invoked. For a monitor wall action, a trigger could be a double click on a monitor. Background actions are triggered by alarms or by a Gateway command. When defining an action for a monitor, you could specify, for instance, that a specific full screen layout be displayed on the monitor wall in response to the trigger. **on Change**: background action is triggered by any change in alarms status **on Disabled**: background action is triggered when an alarm is disabled **on Normal/OK**: background action is triggered when an alarm reverts to normal **on Minor/Warning**: *supported for Gateway alarms only* **on Major**: *supported for Gateway alarms only* **on Critical/Error**: background action is triggered by a critical alarm
Triggering of actions	Any Kaleido-X alarm can be used as a trigger to invoke a background (floating) action. The end event of any Kaleido-X countdown timer can be used as a trigger to invoke a background (floating) action. Gateway commands sent by an external device can be used to trigger actions created in XEdit.

Term	Description
Triggering of GPI inputs & outputs	Any Kaleido-X alarm can be used to trigger a GPI output change. Any GPI input from the Kaleido-X can trigger a background (floating) action.
Gateway	Refers to the "Kaleido Remote Control Protocol (Gateway)" interface supported by Miranda multi-viewers. See the *Kaleido Remote Control Protocol (Gateway) User's Guide* for more information.

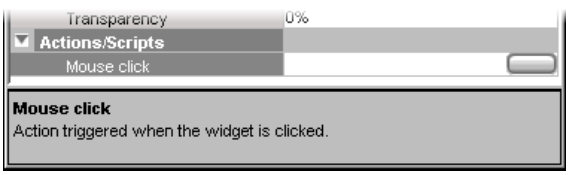
Detailed Directions

Creating Monitor Wall Actions

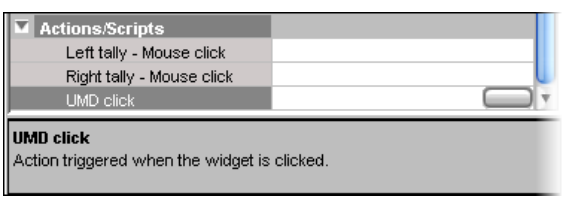
Monitor wall actions can be assigned to a monitor on a specific layout. Such actions can only be triggered when that layout is loaded on the monitor wall.

To assign a monitor wall action to a monitor:

1. Open the layout that contains the monitor to which you wish to assign an action, or create a new layout.
2. In the **Layouts** tab, click the appropriate monitor.
3. In the **Properties** pane, click the **Mouse click** box, under **Actions/Scripts**:



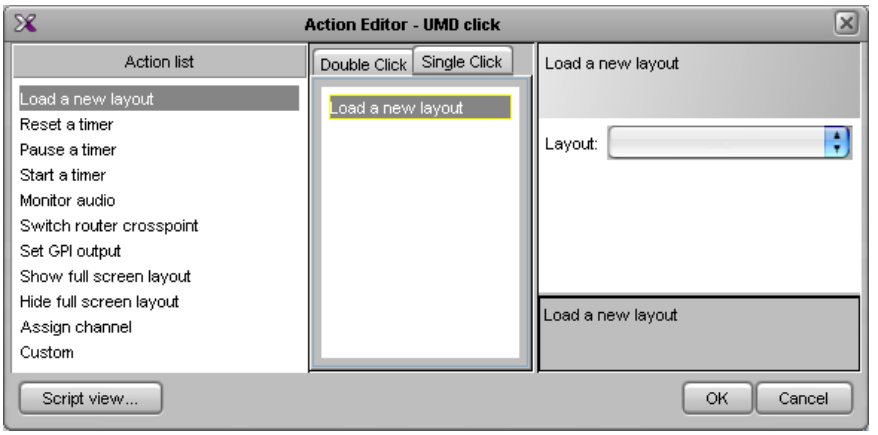
> **Note:** For a UMD, three action types can be set, and there is a box for each under **Actions/Scripts**: **Left tally - Mouse click**, **Right tally - Mouse click**, and **UMD click**.



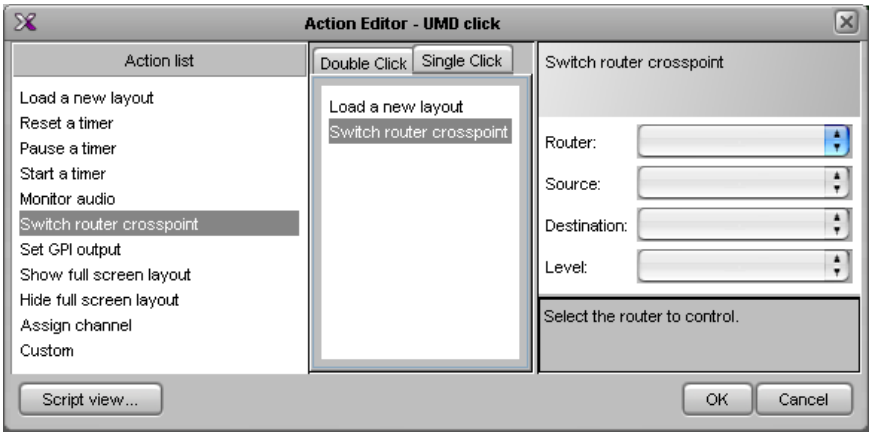
4. Click the button that appeared at the end of the box you clicked.

   The **Action Editor** window appears.

5. In **Action Editor**, click an action, and then drag it from the **Action List** pane into the middle pane under either the **Single Click** or **Double Click** tab:



6. Select the action in the middle pane.
7. In the right pane, specify the attributes of the action.
8. Repeat the procedure to add more actions. If multiple actions are specified, the trigger (e.g. single click on UMD) will cause all of these actions to be executed in order:



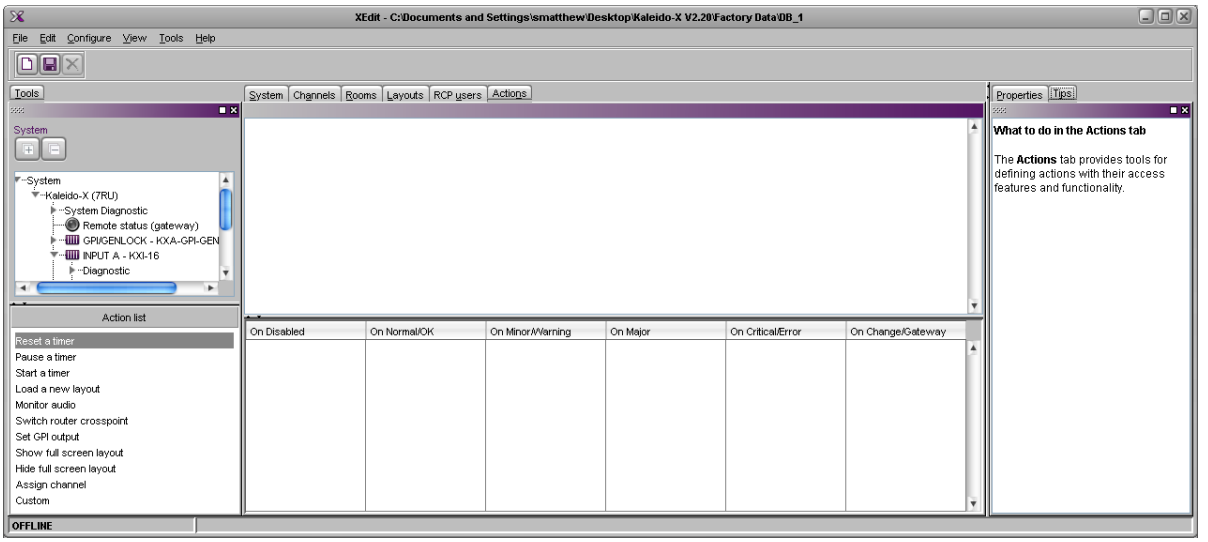
9. When finished, click **OK**. The next time the layout is loaded on the monitor wall, the actions will be available.

> **Note:** When you click a monitor on the monitor wall, all the actions associated with the single-click event are triggered. When you double-click a monitor, all the actions associated with the single-click AND the double-click events are triggered.

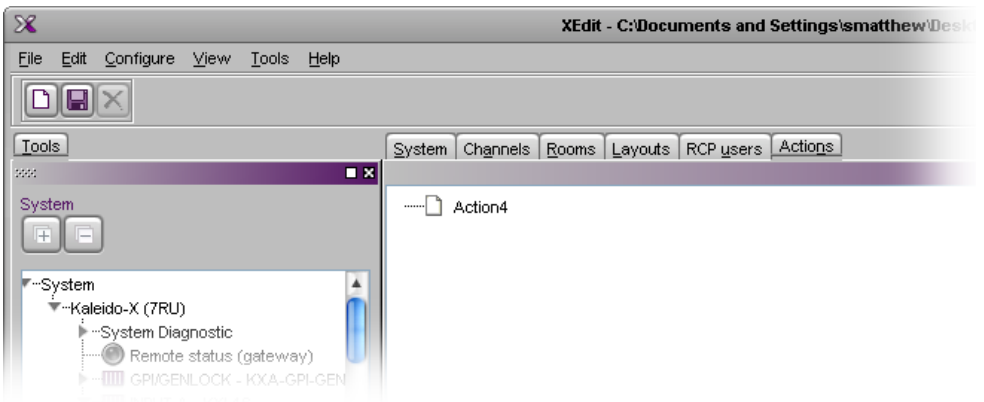
Creating Background Actions

To create a background action:

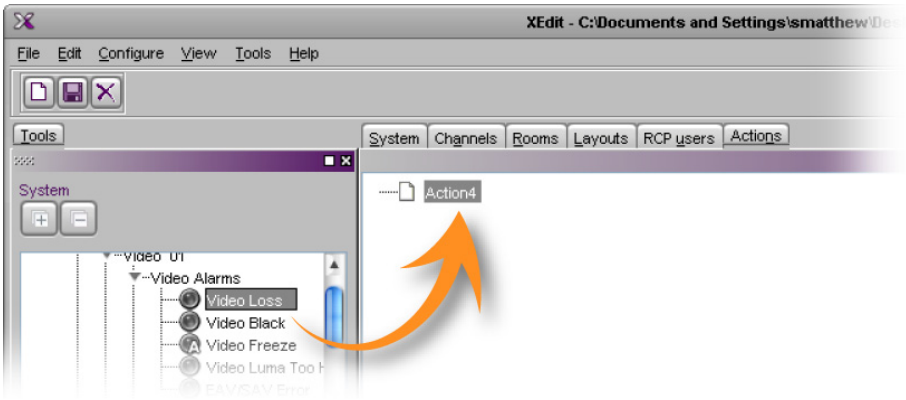
1. Launch XEdit and open the database associated with the Kaleido-X for which you wish to create a background action. Alternatively, click **Connect** on the **Configure** menu, to work online (see "Using XEdit Online" on page 69).
2. Click the **Actions** tab:



3. Click the **New** button in the application toolbar:

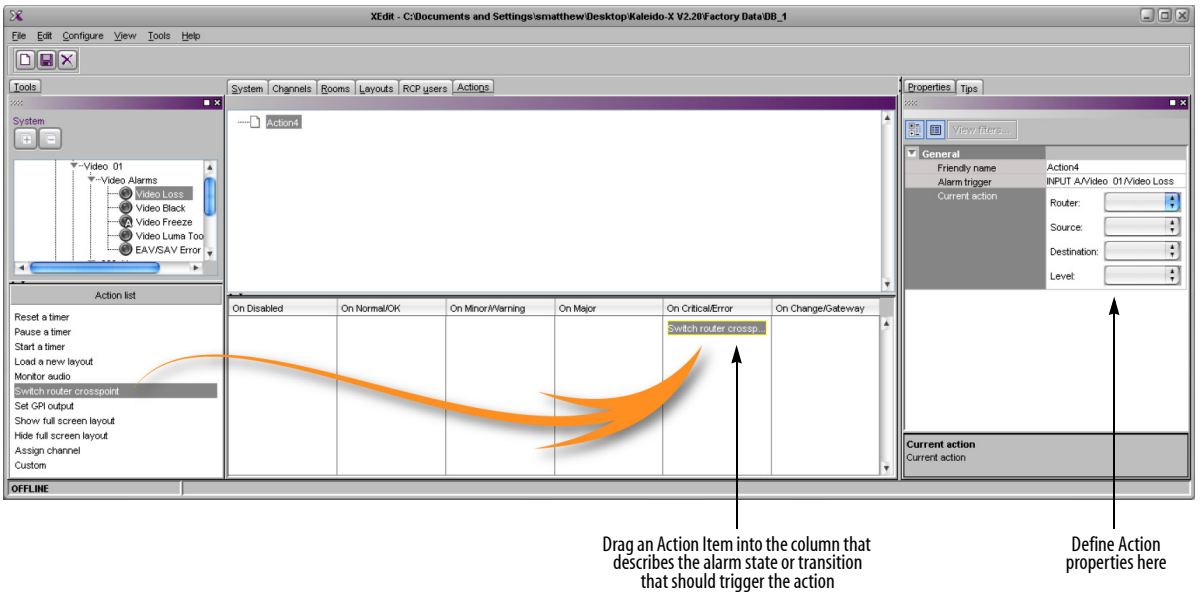


4. In the **Tools** pane, click and drag an alarm from the System tree onto the newly created action. This defines the alarm as the trigger for the action. Alternatively, you can right-click on the action and select the alarm source from a pop up menu:



Note: You do not have to perform this step for actions triggered by Gateway commands, because the Gateway alarm itself acts as the trigger.

5. From the **Action List** pane under the **Tool** tab, click and drag one of the available action items and drop it in one of the six columns at the bottom of the **Actions** pane:



6. Configure the action's properties in the **Properties** pane.
7. Repeat step 5 and step 6 as necessary.

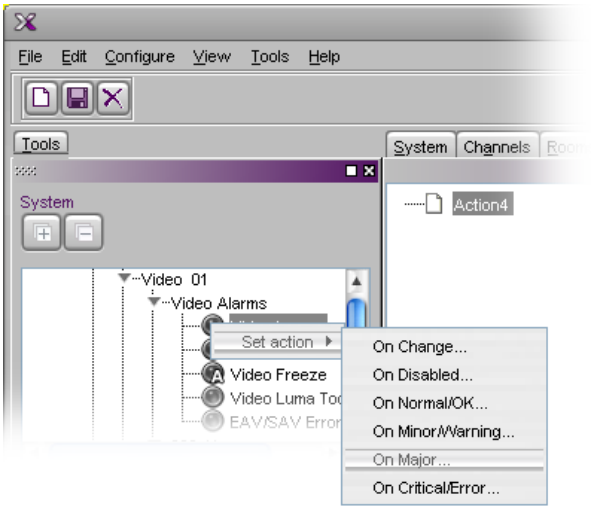
Note: If you assign multiple action items to a trigger, you can change the order of execution by dragging items to higher or lower positions in the list. When the background action is triggered, its associated action items are executed in order from top to bottom.

8. Click the **Save** button in the application toolbar.

9. Export the database to the Kaleido-X.

Creating a background action from the System list

1. Under the **System** tab (or any other tab that shows a filtered System list displaying alarms), right-click on a specific alarm:

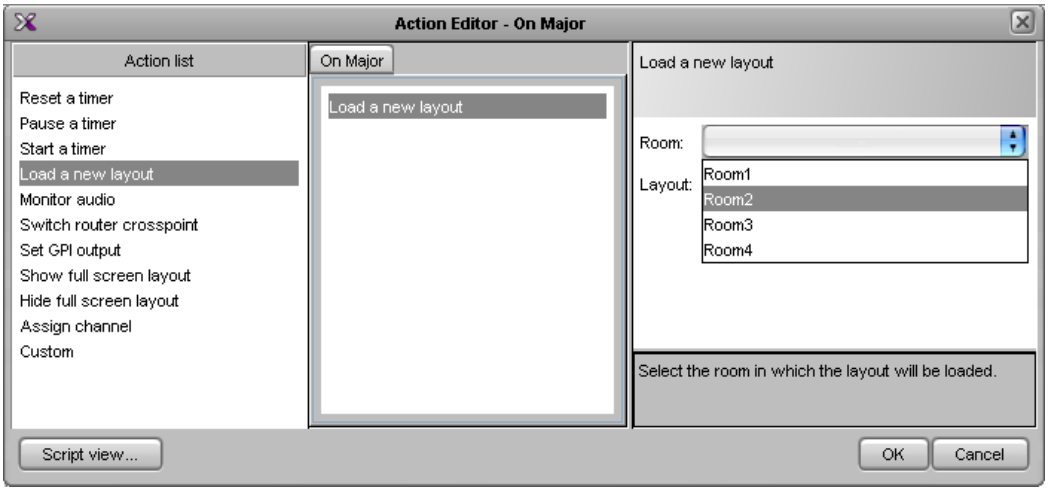


2. From the **Set action** menu, select a trigger condition:
   - on Change
   - on Disabled
   - on Normal/OK
   - on Critical/Error

   Note: The trigger conditions **on Minor/Warning** and **on Major** are supported for Gateway alarms only.

   The **Action Editor** window appears.

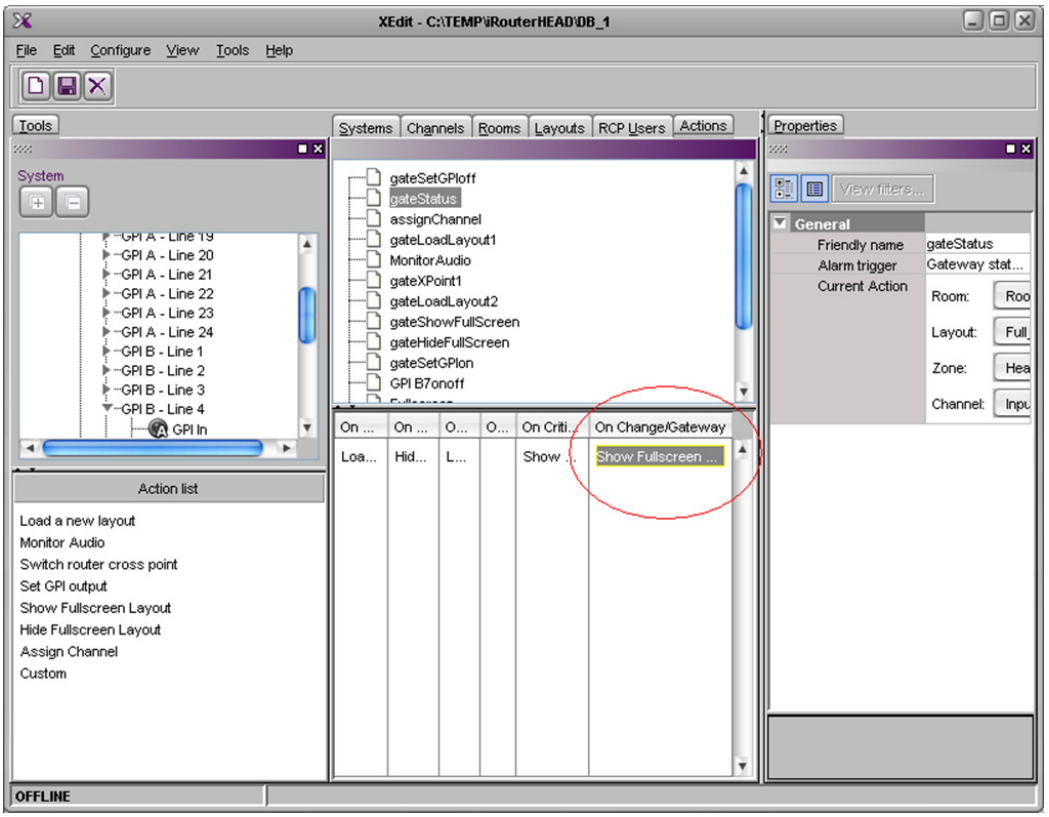
3. From the **Action list** pane, click and drag one of the available action items to the middle column:



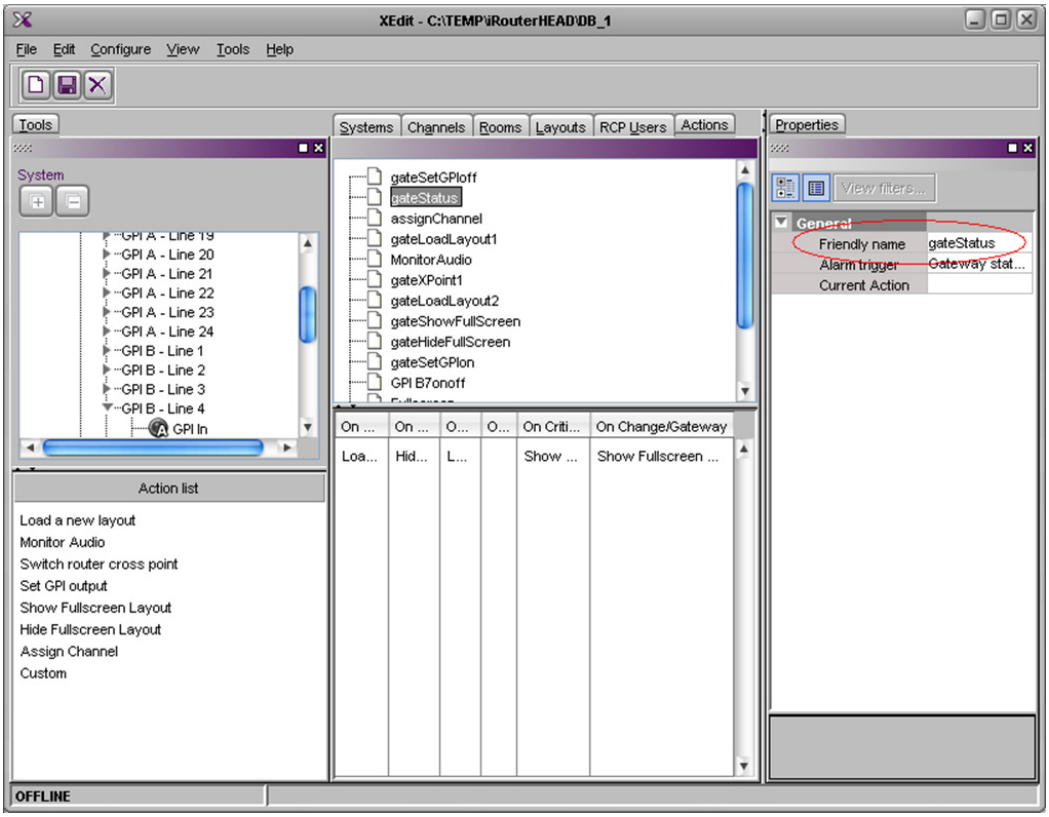
4. Edit the action item's properties in the **Properties** pane.
5. Repeat steps 3 and 4 as needed.
6. Click **OK** to close the window and save the action.
7. Export the database to the Kaleido-X.

Creating an action that can be triggered via the a Gateway command

1. Perform steps 1 to 3 from "To create a background action:" on page 241.
2. From the **Action List** under the **Tool** pane, click and drag one of the available action items and drop it in the **On Change / Gateway** column at the bottom of the **Actions** pane:



3. Under **Properties** > **General**, type a **Friendly name** for the Action:



Note: The **Friendly name** is used with the `setKFireAction` command to trigger the action. Refer to the *Kaleido Remote Control Protocol (Gateway) User's Guide* for details.

Editing an action

1. Select an action under the **Actions** tab, or in the middle pane of the **Action Editor** window.
2. Under the **Properties** pane, modify the action item's parameters
3. Click **Save** in the application toolbar if you modified the action under the **Actions** tab, or click **OK** if you modified the action in the **Action Editor** window.
4. Export the database to the Kaleido-X.

Removing an action item from an action

1. Select an action under the **Actions** tab, or in the middle pane of the **Action Editor** window.
2. Select one or more action items associated with the action.
3. Press the Delete key.
4. Click **Save** in the application toolbar if you modified the action under the **Actions** tab, or click **OK** if you modified the action in the **Action Editor** window.
5. Export the database to the Kaleido-X.

Deleting an action

1. Select an action under the **Actions** tab.
2. Select one or more action items associated with the action.
3. Click the **Delete** button in the application toolbar.
4. Click **Save** in the application toolbar if you modified the action under the **Actions** tab, or click **OK** if you modified the action in the **Action Editor** window.
5. Export the database to the Kaleido-X.

11 Managing Kaleido-RCP2 Users

This chapter explains the configuration of the Kaleido-X for use with a Kaleido-RCP2 Remote Control Panel.

Summary

XEdit Quick Start Task List 249
Managing RCP Users 250
Managing Room Access 251
Setting Room Preferences 252
Setting RCP User Preferences 256

Checklist

XEdit Quick Start Task List

Follow these steps in XEdit, to set up your RCP Users' profiles:

1. Create an RCP user. See "Managing RCP Users" on page 250.
2. Grant room access to the RCP user. See "Managing Room Access" on page 251.
3. Select the configuration of the external keyboard for this user. See "Setting the Keyboard Language" on page 259.

Key Concepts

RCP2

The Kaleido-RCP2 is a multi-function remote control panel designed for use with Miranda's Kaleido-X Software. Ethernet connectivity allows multiple RCP2 users to access multiple Kaleido-X systems, allowing convenient access to the real-time operating features of the Kaleido-X.

The XEdit application is used to manage certain aspects of the Kaleido-RCP2.

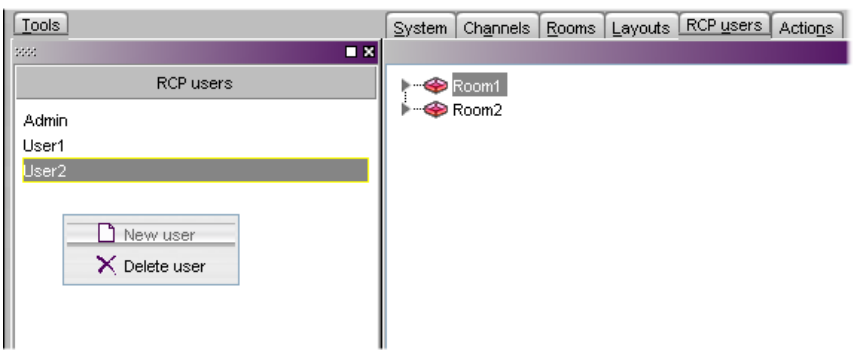
Detailed Directions

Managing RCP Users

Adding RCP Users

To add an RCP user to the system:

1. In the main window, click the **RCP users** tab.
2. In the **Tools** pane, right-click anywhere in the **RCP users** area, and then click **New user** on the shortcut menu:



RCP users shortcut menu

A new user is added to the **RCP users** list.

Notes

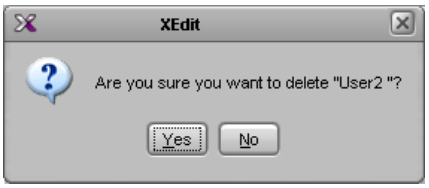
- New users are called UserN, where N = 1, 2, 3 etc.
- RCP users can be renamed. See "Changing an RCP User's Name and Password" on page 261.
- New users are saved automatically; it is not necessary to click the **Save** button after adding a user to the system.

Removing RCP Users From the System

To remove an RCP user from the system:

1. In the main window, click the **RCP users** tab.
2. In the **Tools** pane, select the user you wish to remove from the system's RCP users list.
3. Right-click the selection, and then click **Delete user** on the shortcut menu.

   A confirmation window appears:



4. Click **Yes**.
5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

> **Note:** The user "Admin" cannot be removed.

Managing Room Access

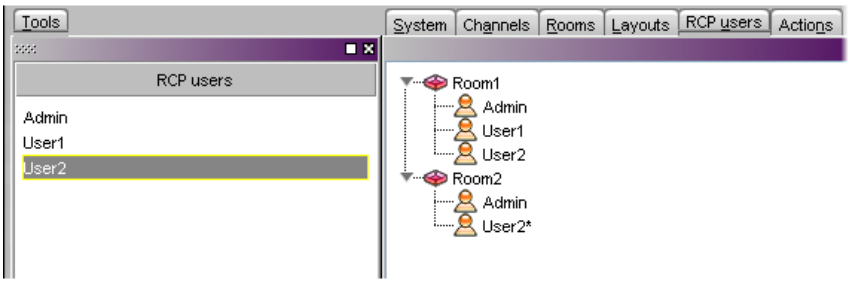
Granting Room Access to RCP Users

To grant RCP users access to a room:

1. In the main window, click the **RCP users** tab.
2. In the **Tools** pane, select the appropriate users from the RCP users list.

> **Note:** Use Shift+click or Ctrl+click to select multiple users.

3. Drag the selected users onto the appropriate room in the **RCP users** tab.
4. Expand the room (if it is not expanded already) to verify that the users were added to the hierarchical list:



RCP user "User2" has been granted access to Room2

5. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Removing RCP Users From Rooms

To remove RCP users from rooms:

1. In the main window, click the **RCP users** tab, and then select the RCP users you wish to remove, from the hierarchical list.

   Note: Use Shift+click or Ctrl+click to select multiple users.

2. On the **File** menu, click **Remove user from room**. Alternatively, click the Remove button on the toolbar, or right-click and then click **Remove user from room** on the shortcut menu.
3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

   Note: The user "Admin" cannot be removed.

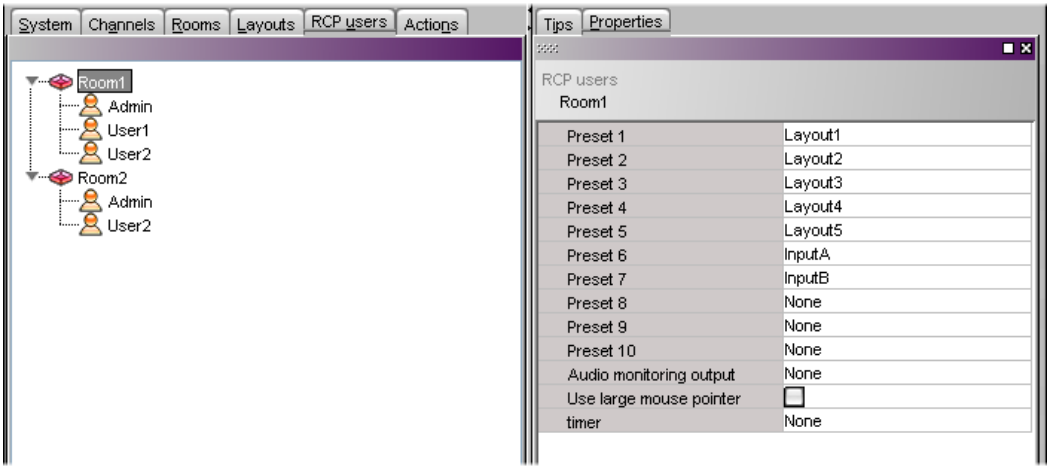
Setting Room Preferences

Room preferences will apply by default for any user who log on to the room from the RCP2. See "Setting RCP User Preferences" on page 256, to learn how to configure preferences for a specific user.

To set default preferences for a room:

1. In the main window, click the **RCP users** tab, and then select the appropriate room, from the hierarchical list.

   The selected room's preferences (layout presets, audio monitoring output, mouse pointer size, and timer) are listed in the **Properties** pane:



Room-level settings

2. Modify the room preferences as needed.

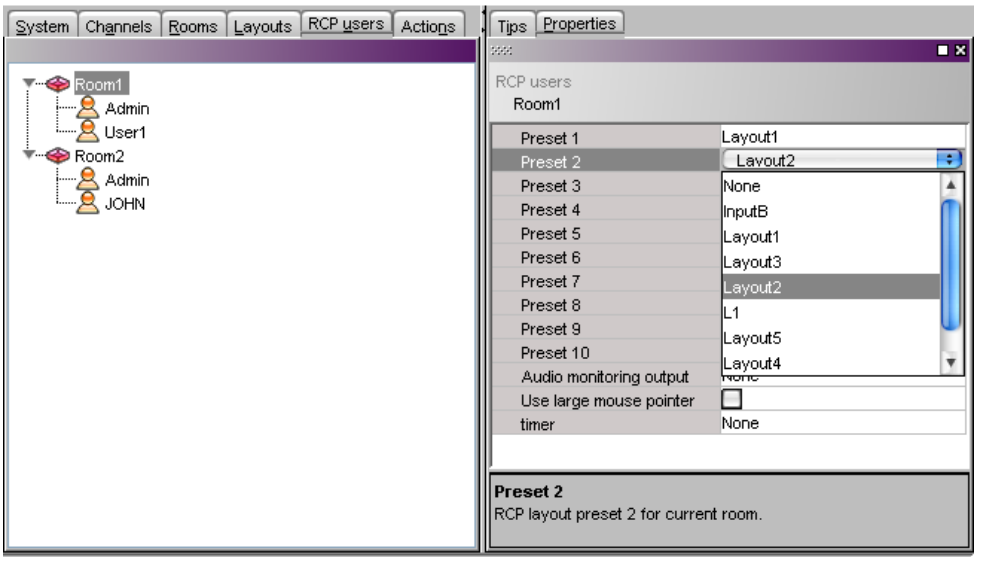
> **Note:** An asterisk (*) will appear beside the room in the main pane, if any of its properties are modified. The asterisk will disappear when the changes are saved.

3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Assigning Room Layouts to the RCP2's Preset buttons

To assign room layouts to the RCP2's preset buttons:

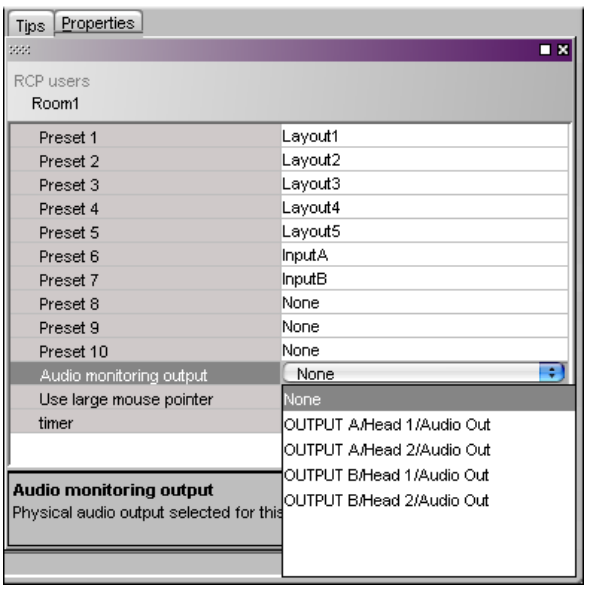
1. In the main window, click the **RCP users** tab, and then select the room for which you wish to configure layout presets, from the hierarchical list.
2. For each RCP preset button, click the corresponding box in the **Properties** pane, and then select the appropriate layout from the list:



Assigning an Audio Output to the RCP2's AUDIO MONITORING Button

To assign an audio output to the RCP2's AUDIO MONITORING button for a room:

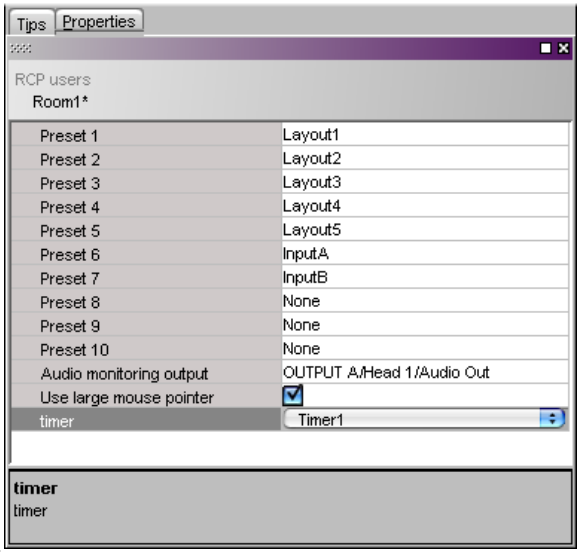
1. In the main window, click the **RCP users** tab, and then select the room for which you wish to configure the RCP2's AUDIO MONITORING button, from the rooms hierarchical list.
2. In the **Properties** pane, click the **Audio monitoring output** box, and then select the output used to monitor audio signals, from the list of available outputs:



Enabling the Large Mouse Pointer for a Room

To display a larger pointer on the monitor wall for a room:

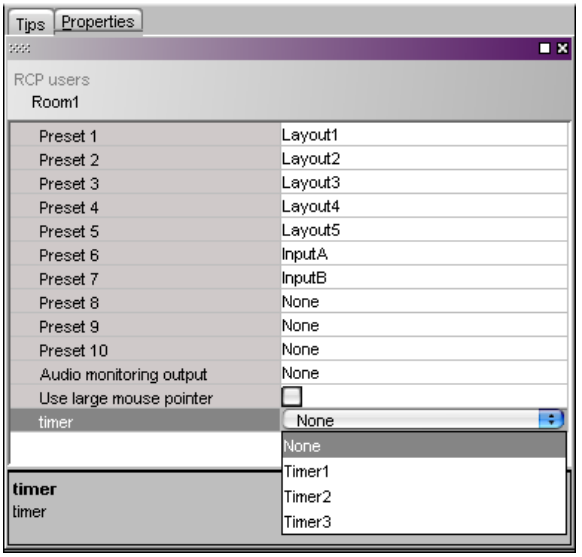
1. In the main window, click the **RCP users** tab, and then select the room where you wish to use a large pointer on the monitor wall.
2. In the **Properties** pane, select the **Use large mouse pointer** check box:



Assigning a Timer to a Room

To assign a default timer for all RCP users in a room:

1. In the main window, click the **RCP users** tab, and then select the room to be assigned a timer, from the hierarchical list.
2. In the **Properties** pane, click the **Timer** box, and then select the appropriate timer to be controlled by default from this room:



Setting RCP User Preferences

To modify the preferences for an RCP user:

1. In the main window, click the **RCP users** tab, and then select the user whose preferences you wish to set, from under the appropriate room, in the hierarchical list.

   The selected RCP user's preferences (layout presets, full screen assignment, audio monitoring output, external keyboard configuration, and timer) are listed in the **Properties** pane.

2. Modify the preferences as needed. See "Assigning Room Layouts to an RCP User's Presets" on page 257, "Assigning a Full Screen Layout to an RCP User" on page 258, "Assigning Audio Output to an RCP User" on page 259, and "Setting the Keyboard Language" on page 259.

   Note: User preferences are specific to an RCP user in a specific room. If no preferences have been specified for an RCP user, then the corresponding room preferences apply. They appear in gray in the **Properties** pane.

3. Modify the system-level attributes for this user (user name, description, password) as needed. See "Changing an RCP User's Name and Password" on page 261.

   Note: These system-level attributes are specific to a user, independent of the room to which the user is assigned.

4. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

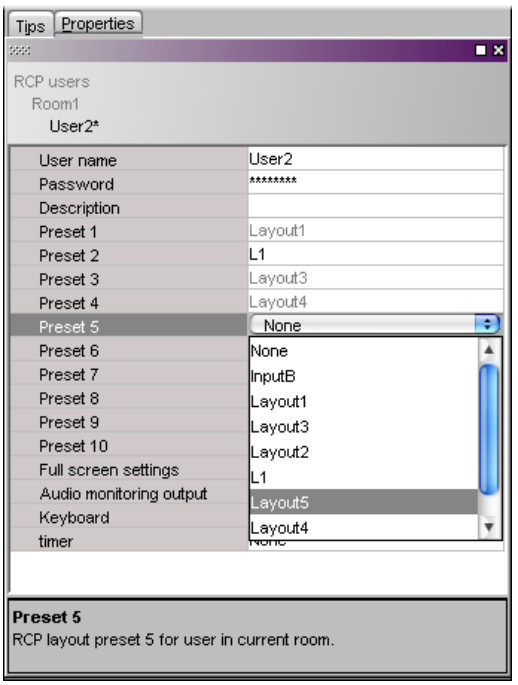
Notes

- The "Admin" user name cannot be modified.
- An asterisk (*) will appear beside the RCP user in the main window if any of the user properties are modified. The asterisk will disappear when the changes are saved.
- The message "Cannot find reference" indicates that a full screen layout, full screen zone, or layout associated with a Room or RCP user has been deleted.

Assigning Room Layouts to an RCP User's Presets

To assign a room layout to an RCP user's preset button:

1. In the main window, click the **RCP users** tab, and then select the user for whom you wish to configure the RCP2's preset buttons, from under the appropriate room in the hierarchical list.
2. For each RCP preset button, click the corresponding box in the **Properties** pane, and then select the appropriate layout from the list:

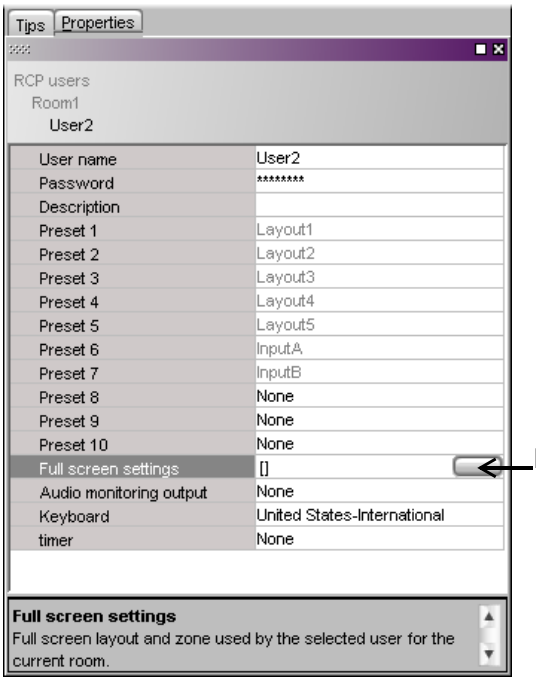


Note: If no layout is specified for this user preset, the layout that has been selected for this preset in the room's preferences will apply. It will appear in gray in the **Preset [n]** box. See "Setting Room Preferences" on page 252.

Assigning a Full Screen Layout to an RCP User

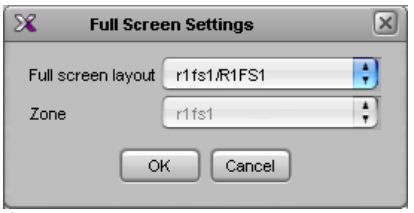
To assign a full screen layout to an RCP user:

1. In the main window, click the **RCP users** tab, and then select the user for whom you wish to configure the RCP2's FULL SCREEN button, from under the appropriate room in the rooms hierarchical list.
2. In the **Properties** pane, click the **Full screen settings** box, and then click the button that appeared at the end of the box:



The **Full Screen Settings** window appears.

3. In **Full Screen Settings**, select the appropriate full screen layout, and then click **OK**:

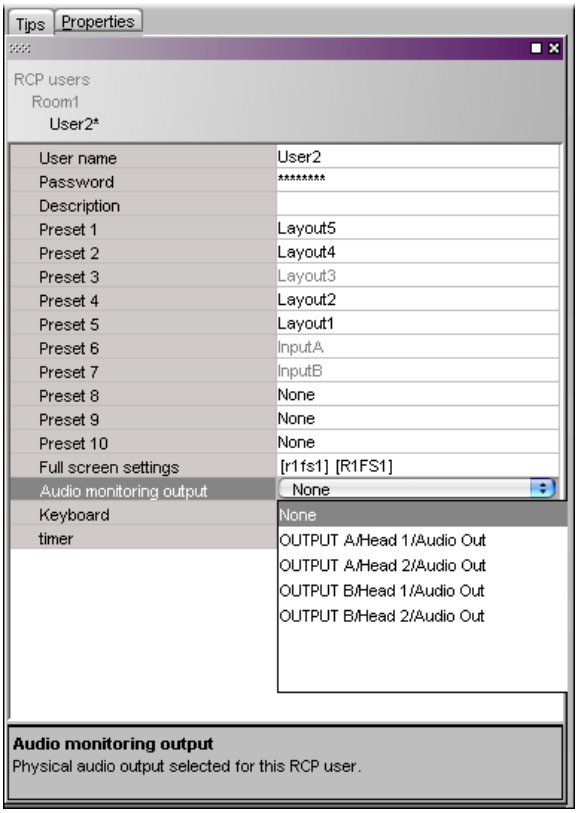


> **Note:** Before XEdit 2.00, full screen layouts were not associated with a specific full screen zone. In the case of such legacy layouts, you must also select the appropriate full screen zone from the **Zone** list.

Assigning Audio Output to an RCP User

To assign an audio output to an RCP User:

1. In the main window, click the **RCP users** tab, and then select the user for whom you wish to configure the RCP2's AUDIO MONITORING button, from under the appropriate room in the rooms hierarchical list.
2. In the **Properties** pane, click the **Audio monitoring output** box, and then select the output used to monitor audio signals by this user in this room, from the list of available outputs:

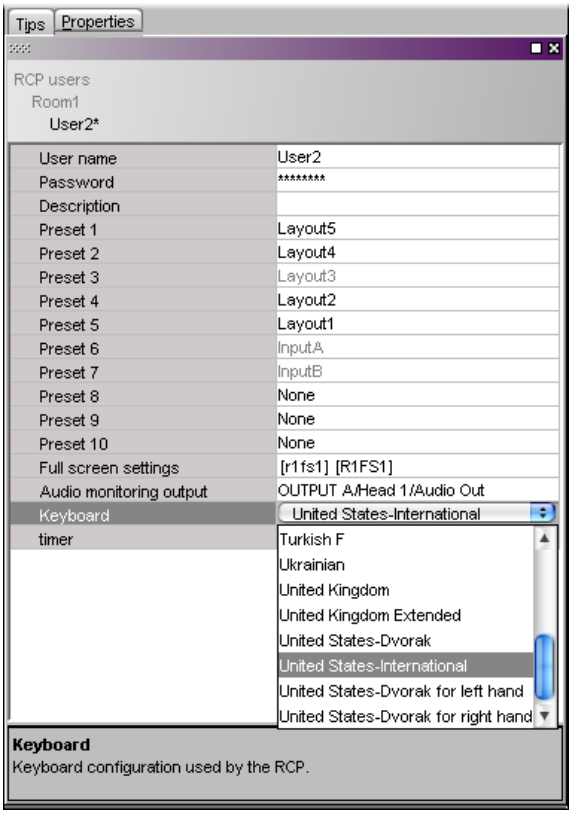


> **Note:** If no audio monitoring output is specified for this user, the output signal that has been selected in the room's preferences will apply. It will appear in gray in the **Audio monitoring output** box. See "Setting Room Preferences" on page 252.

Setting the Keyboard Language

To set the input language for an external keyboard connected to the RCP2:

1. In the main window, click the **RCP users** tab, and then select the user for whom you wish to set the keyboard, from under the appropriate room in the rooms hierarchical list.
2. In the **Properties** pane, click the **Keyboard** box, and then select the keyboard to be used by this user in this room, from the list of available keyboard configurations.

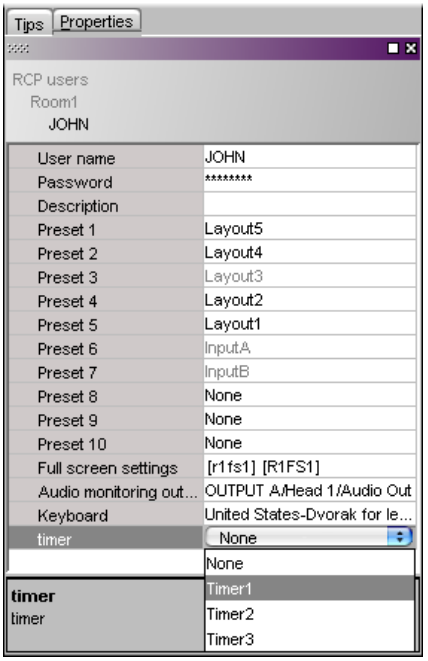


Note: This setting applies to the selected user, in the current room only. A keyboard configuration must be selected for each user, in every room, unless the system default is suitable.

Assigning a Timer to an RCP User

To assign a timer to an RCP User:

1. In the main window, click the **RCP users** tab, and then select the user to whom you wish to assign a timer, from under the appropriate room in the rooms hierarchical list.
2. In the **Properties** pane, click the **Timer** box, and then select the appropriate timer to be controlled by this user in this room, from the list of available timers:



> **Note:** If no timer is specified for this user, the timer that has been selected in the room's preferences will apply. It will appear in gray in the **Time** box. See "Setting Room Preferences" on page 252.

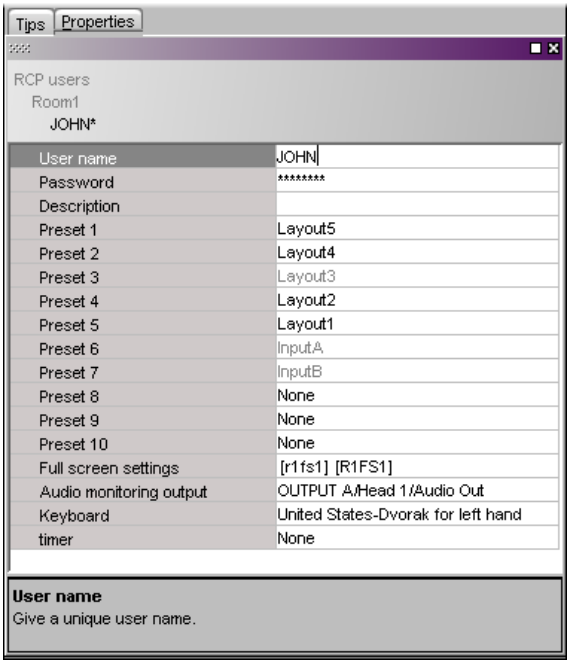
Changing an RCP User's Name and Password

To change an RCP user's name or password:

1. In the main window, click the **RCP users** tab, and then select the user whose user name or password you wish to change, from under any of the rooms in the hierarchical list.

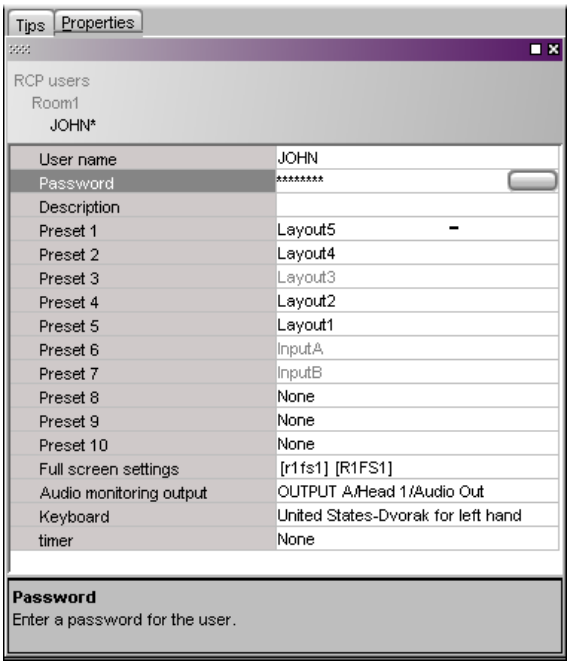
> **Note:** A user's name or password cannot be changed from within the **Tools** pane. They can only be changed from within the rooms hierarchical list. The user can be removed from the room after the name or password change. The change will be retained. See "Granting Room Access to RCP Users" on page 251.

2. In the **Properties** pane, click the **User name** box, and then type the new name:



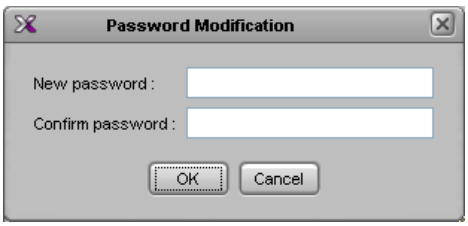
Note: The name must be no more than 8 characters in length, and consist of only letters and numbers (no spaces or special characters).

3. In the **Properties** pane, click the **Password** box:



4. Click the button that appeared at the end of the box.

The **Password Modification** window appears:



5. In **Password Modification**, type the new password (only numbers, up to 8 digits) and then type it again to confirm.
6. Click **OK**.

12 Routers & Kaleido-X

This chapter describes how Kaleido-X can be configured to control external routers, to act as a router itself, and to be controlled from an upstream router control panel or software.

Overview

The Kaleido-X, Kaleido-X16, and Kaleido-Modular multi-viewers are designed for flexible integration with a variety of routing devices. A multi-viewer can be configured to control, or to be controlled by a variety of routing devices. The Kaleido-X (7RU) and Kaleido-X16 have an internal router option, which offers switching of up to 192 unprocessed inputs to 96 HD/SD outputs (16 inputs to 2 outputs, in the case of the Kaleido-X16), for feeding monitors, test equipment and master control or production switchers. A multi-viewer can also be configured as a router and provide switching of its logical sources to router card outputs (if available) or monitor wall destinations.

The Kaleido-X Software interfaces with most routing devices, via Ethernet or serial connection, for router control and dynamic text label tracking. The interface allows dynamic source updates from the router, and quick access to any router sources using the On-screen Mouse control. Kaleido-X can also save source assignments on the layout presets, and reconfigure the router from a recall of a layout preset.

For quality control applications, the monitor wall pointer (controlled by a mouse connected via a Kaleido-RCP2 control panel) can be used to assign a selected source to a monitoring output bus. This creates a highly intuitive and rapid quality control capability. Miranda has been working closely with Snell (Pro-Bel) and NVISION (now part of Miranda) to provide a cost-reduced, multi-image/routing solution, with compelling integration and a direct download of sources text databases from routers and production switchers to the multi-viewer system.

See “Tally Interface Devices” on page 311 for more information on configuring supported production switchers to interact with the Kaleido-X Software.

Internal Router

The Kaleido-X (7RU) and Kaleido-X16 multi-viewers feature built-in routing which eliminates the need for separate routing in control rooms, and provides a significant cost saving.

Up to 48 unprocessed, baseband outputs can be provided from any of the 96 HD / SD-SDI inputs to each Kaleido-X (7RU) processor. In the case of a Kaleido-X16, up to 2 baseband outputs can be provided from any of the 16 inputs. These outputs can be used to feed high quality CRT monitors, test equipment such as waveform scopes, as well as ISO recorders. The outputs can even feed other multi-viewers.

The router outputs can be controlled by point-and-click menus on the monitor wall, by a Nevion (Network Electronics) remote control panel via a serial connection, by a Miranda (NVISION) system controller via a TCP/IP connection, or by a production switcher’s auxiliary bus controls. The router outputs can be controlled by external controllers via the following protocols: VikinX Compact (serial), VikinX Modular (TCP/IP), NVISION (TCP/IP), Snell (Pro-Bel) (serial, TCP/IP) or manually from the Miranda Router Control Matrix application available from the Kaleido-X Web page.

The built-in router improves integration, and reduces cabling and equipment costs. The routing capability eliminates the need for a separate router for the following applications:

- feeding baseband high quality monitors anywhere in a facility
- feeding test equipment for quality control monitoring
- feeding a secondary multi-viewer for output expansion
- feeding an ISO recorder in production studios

Kaleido-X as a Router

Independent from the routing capabilities obtained by adding KX0-24Router cards to a Kaleido-X (7RU) multi-viewer or by enabling the router output ports on a Kaleido-X16, any multi-viewer can be used as a router in itself. The logical sources defined in XEdit’s **Channels/Sources** tab are considered as the sources, and the destinations are either monitors on the monitor wall, or the multi-viewer’s own router outputs (if applicable). Just as the built-in routing, the logical source routing can be controlled by any external router control device or software.

Key Concepts

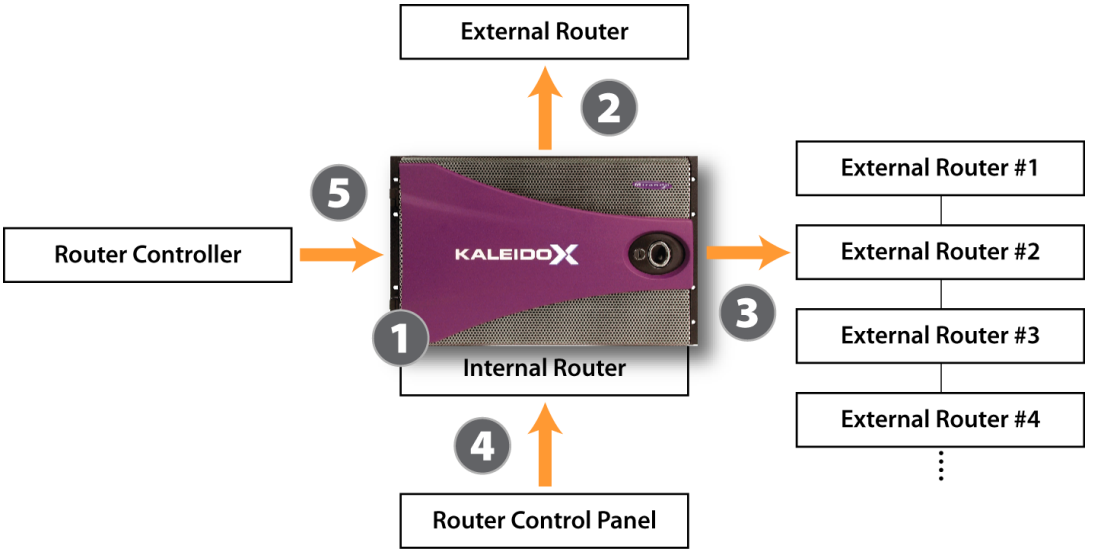
Term	Description
External Router	In XEdit's Equipment library, **External Router** refers to an upstream router that will be controlled by the multi-viewer. For example, the multi-viewer can request a specific source from the external router to be routed to a specific video monitor on the monitor wall.
Physical router	In XEdit, a physical router is a software representation of router equipment. Physical routers hold information on how to communicate with the equipment, as well as the number of physical levels associated with the router.
Physical level	Some router equipment can have multiple physical levels, which are subsets of the physical router's inputs and outputs.
Protocol	The instruction set and parameters used to communicate with and control a device. The router protocols supported in iControl are also supported by Kaleido-X, and vice-versa (although there might be a slight lag between the time the latest software versions are released).
Router controller	*Router controller* refers to any software or hardware that can request a crosspoint change on a router. The Router Control Software Single Bus and Matrix View applications (also part of the iRouter Router Control Software packaged with iControl Application Servers) are examples of router controllers. They are integrated with the Kaleido-X Software, and can be launched from the Kaleido-X home page.
Logical router	A logical router is a software abstraction that permits the control of multiple physical routers/levels as a single entity. Logical routers have a unique matrix ID within a router manager.
Logical level	A logical level defines the mapping between logical and physical inputs, and the mapping between the logical and physical outputs.
Matrix ID	A unique identifier used by a router controller to identify which router is the target of a switching command.

Term	Description
KX Router logical router	The logical sources defined in XEdit's **Channels/Sources** tab (see page 135) are considered sources for the *KX Router* logical router, whose destinations are either monitors on the monitor wall, or router outputs for multi-viewer models that have them.[1] Source IDs to be used for routing purposes are assigned in XEdit's **Channels/Sources** tab. These IDs can be used by external router control software or devices. The logical destinations for the KX Router logical router are configured in the **Destinations** tab.
Router service	The Kaleido-X router service is the software component responsible for communicating with physical routers, and for managing crosspoint change requests coming from router controllers.

1. i.e. the 24 BNC outputs on a KXO-24Router card for a Kaleido-X (7RU), or the two RT OUT ports on a Kaleido-X16. The Kaleido-X (4RU) and KMV-3901/3911 multi-viewer models do not have router outputs.

Router Control Configurations

Multi-viewers can be configured for router control in five ways:

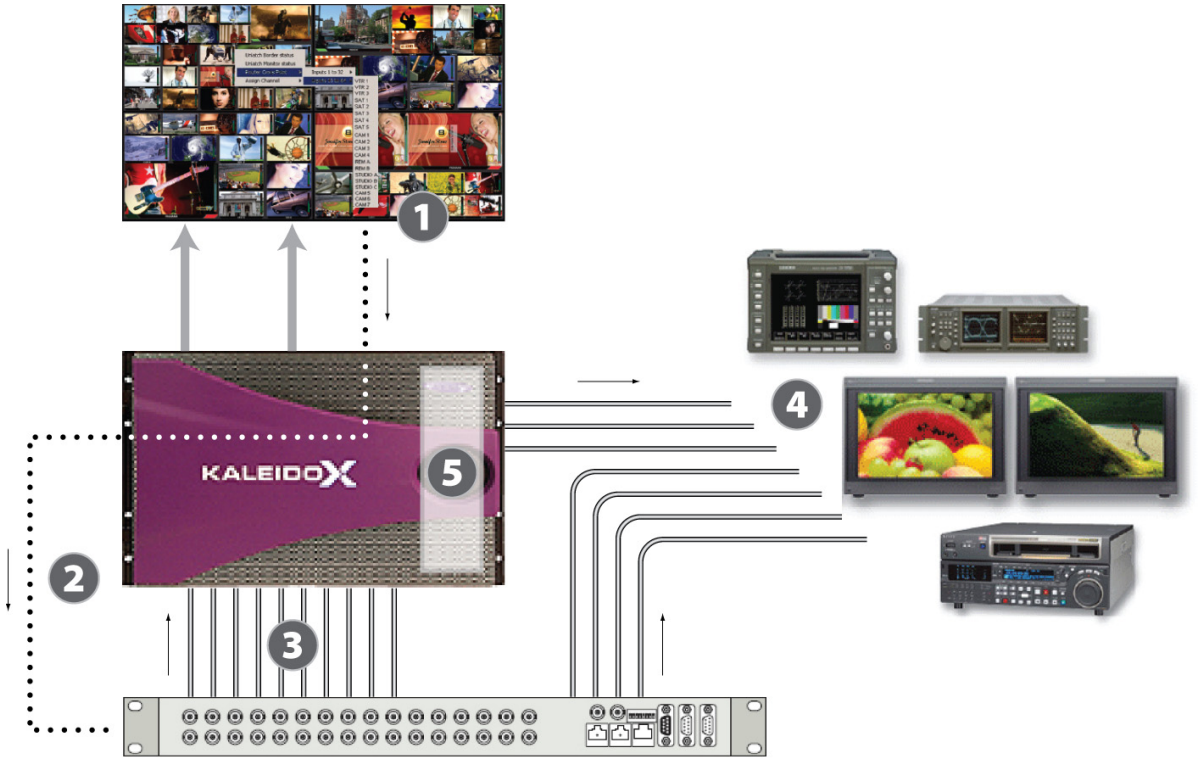


1. Kaleido-X (7RU) and Kaleido-X16 multi-viewers allow direct control over their own internal router module.
2. All multi-viewers allow direct control over an external router via a serial or TCP/IP connection.
3. All multi-viewers allow control over a series of external routers in a cascade configuration: the Kaleido-X Software sends a router command to one of the routers via a serial or TCP/IP connection, which then broadcasts it to the other routers in the cascade using an internal communications mechanism (e.g. MIDI). The router command contains an ID that causes it to be accepted by one router in the cascade, and ignored by the rest.

4. All multi-viewers can be controlled by an external (push-button) control panel, via a serial or TCP/IP connection. Usually, such a panel is used to control either a simple external router (case 2, above) connected to the multi-viewer, or the internal router module (case 1, above).
5. All multi-viewers can be controlled by an intelligent router controller, via a serial or TCP/IP connection. The controller can issue commands to the multi-viewer internal router module (if available), or to any external router connected to the multi-viewer. The Kaleido-X Software directs the commands to the designated device, and, as needed, translates the command to the required protocol.

Router Configuration Scenarios

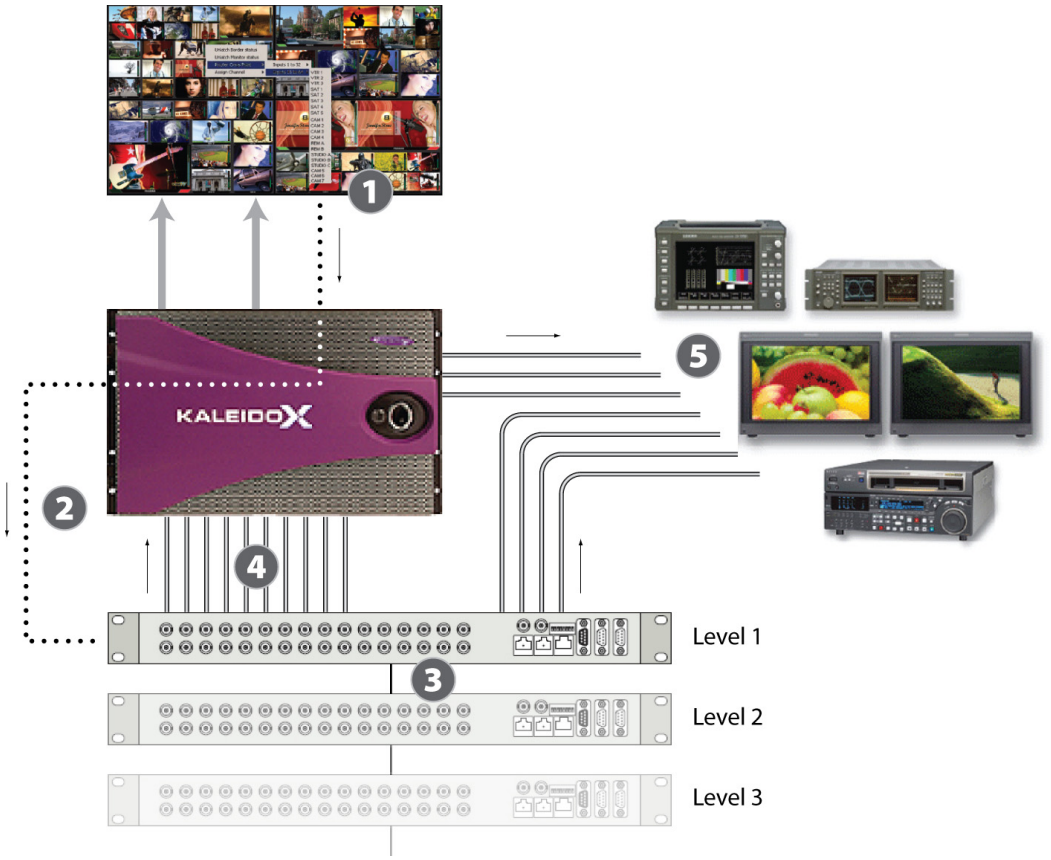
Controlling an External Router



1. An operator chooses an assignment option on the monitor wall menu (e.g. “switch output 2 of external router A to QC monitor”).
2. The Kaleido-X Software interprets the command, and sends it to the designated router over a serial or TCP/IP connection, using the appropriate router protocol.
3. The router receives the command and executes a crosspoint switch, either changing the signal on one of its connections to a multi-viewer input, or…
4. …sending the signal to another device (e.g. vector scope, QC monitor, ISO recorder).

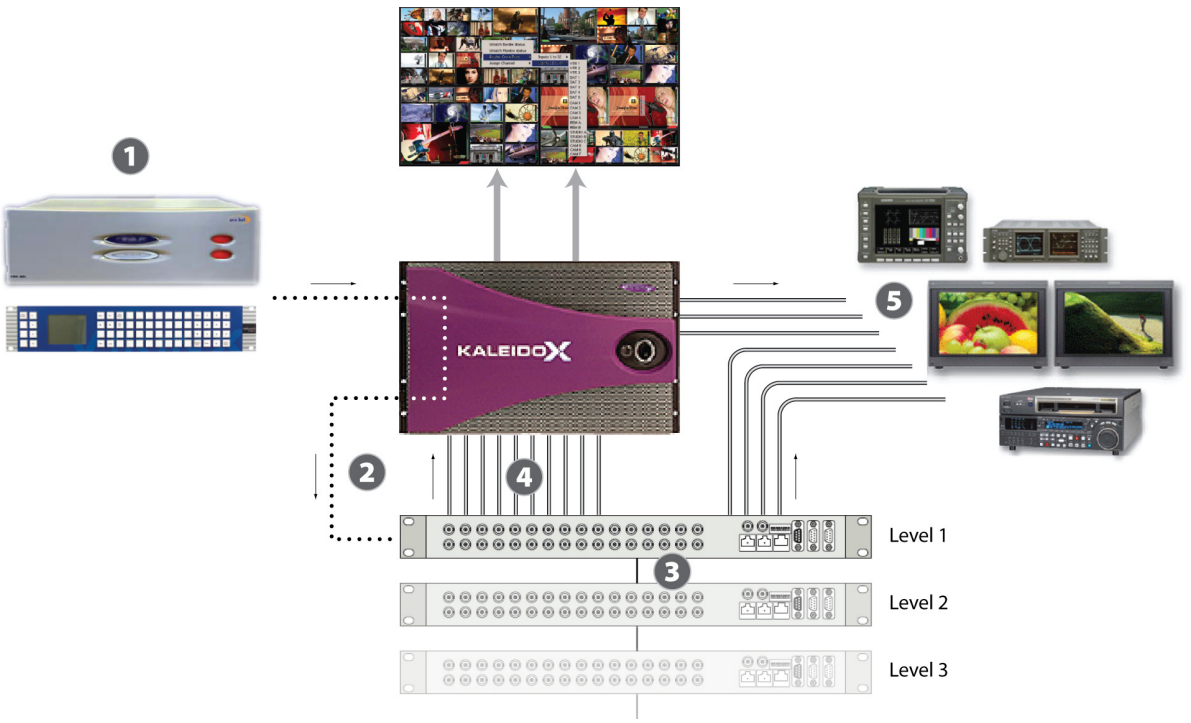
Note: In the same way, commands from the monitor wall menu can also change crosspoints on the multi-viewer's internal router (if available) or on the *KX Router* logical router.

Controlling External Routers in a Cascade



1. An operator chooses an assignment option on the monitor wall menu (e.g. "switch output 23 of external router A, Level 2 to QC monitor").
2. The Kaleido-X Software interprets the command, and sends it to the designated router over a serial or TCP/IP connection, using the appropriate router protocol.
3. The physical router receives the command, and then relays it to the other physical routers in the cascade using an internal communications mechanism (e.g. MIDI).
4. When the targeted *Level* receives the command, it executes a crosspoint switch, either changing the signal on one of its connections to a multi-viewer input, or…
5. …sending the signal to another device (e.g. vector scope, QC monitor, ISO recorder).

Translating Commands from External Router Controllers



1. A system controller—e.g. Miranda (NVISION) NV9000, Snell (Pro-Bel) Aurora, Nevion (Network Electronics) VikinX—sends a router command to an external router connected to the multi-viewer.
2. The Kaleido-X Software detects the command, translates it to the appropriate router protocol and, then sends it to the designated router over a serial or TCP/IP connection.
3. The router (or "Level" in a cascade) receives the command and executes a crosspoint switch, either changing the signal on one of its connections to a multi-viewer input, or…
4. …sending the signal to another device (e.g. vector scope, QC monitor, ISO recorder).

Controlling the Internal Router by Using a Router Control Device or Application

1. An external router control device or application—e.g. Snell (Pro-Bel) Aurora, Nevion (Network Electronics) VikinX—or an automation system—e.g. Sundance Digital Titan—sends a command, over a serial or TCP/IP connection, to the multi-viewer.
2. The Kaleido-X Software detects the command, and executes a crosspoint switch on its internal router…
3. …sending the selected signal from the corresponding multi-viewer input to another device (e.g. vector scope, QC monitor, ISO recorder).

Router Protocols

Optional Drivers for Controlling Routing Devices from the Multi-Viewer

Optional drivers are available to extend your Kaleido-X system with the ability to control routing devices that comply with the protocols listed in the following table. Contact your sales representative for details.

Routers

Company	Protocol	Routers/Controllers	Text database download
Datatek	D-2815 Control Module Protocol		No
ETL	ETL Matrix	ETL Matrix	Yes
Evertz	Quartz Type 1	EQX	Yes

Routers

Company	Protocol	Routers/Controllers	Text database download
Harris (Leitch)	Harris XY Passthrough Protocol	Platinum, Xplus, Integrator, Via-32, Panacea, Xpress	No
Lantronix	(Lightwave) Matrix-Hub Protocol	Matrix-Hub 1000	No
Miranda	Densité	HRS-1801	Yes
		HCO-1801	No
Miranda (NVISION)	NVISION Ethernet protocol - Enterprise router	NV9000 system controllers	Yes
	NVISION Ethernet protocol - Compact router	Compact router series	No
Nevion (Network Electronics)	Network Compact (serial)	VikinX Compact	No
	Network Modular (Ethernet)	VikinX Modular	No
PESA	USP (Unsolicited Status Protocol)	Cheetah, Tiger, Jaguar, Cougar, Ocelot, Bobcat, TDM3000, PERC2000 system controller	No
	CPU Link Protocol No.1 (serial)		No
Quintech	XRM/SRM/MRF/MRM Series Protocol (serial)	SRM 2150 Matrix Switching Systems	No
Snell (Pro-Bel)	General Switcher Protocol (SW-P-02)		No
	General Remote Protocol (SW-P-08)	Halo, Aurora and Sirius Controller (serial control)	Yes
Sony	GVG-NP Emulation	Sony routers (requires HKSPC card); GVG routers (Ethernet)	No
Thomson/Grass Valley	GVG 7000 Native Protocol (serial)	Concerto-series routers, Encore-series control panels	Yes
Thomson/Grass Valley (Philips)	Jupiter VM-3000 ASCIII Protocol	Venus-series and Trinix-series routers	No

Routers

Company	Protocol	Routers/Controllers	Text database download
Utah Scientific	PL-160/PL-320	AVS-1B	No
	RCP-1	SC-1, SC-2, SC-3 series	No
	RCP-3	SC-4 series (Ethernet only)	Yes

Optional Drivers for Controlling Tally Interface Devices from the Multi-Viewer

Optional drivers are available to extend your Kaleido-X system with the ability to control tally interface devices such as the ones listed in the tables below. Contact your sales representative for details.

Production Switchers

Company	Device/System
Thomson/Grass Valley	Kalypso, Zodiak, KayakDD, Kayak SD/HD, DD35, XtenDD HD/SD series
Ross	Synergy series
Snell & Wilcox	Kahuna
Sony	DVS-9000, MVS-8000, MFS-2000

UMD Controllers

Company	Device/System
TSL	UMD Controller (serial, TCP/IP or UDP/IP)
Thomson/Grass Valley	Andromeda UMD Controller
Image Video	TSI-1000 Tally System Interface (requires option from Image Video)

Automation Systems

Company	Device/System
Encoda (Harris)	D-Series Playout Automation
Sundance Digital	Fastbreak NXT Automation (requires option from Sundance Digital)

Built-in Communications Protocols

The multi-viewer itself can be controlled by external devices (e.g. Kaleido-RCP2, router control panels) or applications (e.g. router control software application, Remote Control Gateway) via built-in communications protocols. Such devices or applications can be used to command monitor wall operations (e.g. source assignment) or routing operations.

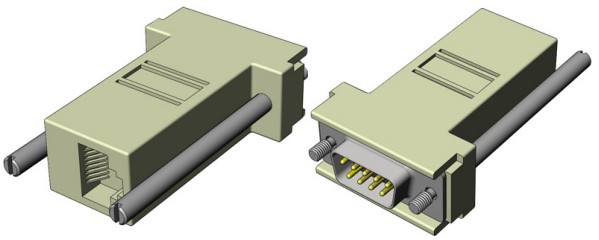
A router control device or application can control not only a Kaleido-X (7RU) or Kaleido-X16 multi-viewer's internal router module, but also the *KX Router* logical router, or any other logical router configured within your multi-viewer system. In the case of the *KX Router* logical router, the device or application must support the *NVISION Ethernet protocol - Compact router* protocol.

Company	Protocol	TCP/IP (port)	Serial
Miranda	Kaleido Remote Control Protocol	Yes (13000)	Yes
Miranda (NVISION)	NVISION Ethernet protocol - Compact router	Yes (5194)	No
Nevion (Network Electronics)	Network Compact	N.A.	Yes
	Network Modular	Yes (4381)	No
Snell (Pro-Bel)	SW-P-08	Yes (14000)	Yes
	SW-P-02	Yes (2000)	Yes

Serial Connections

The physical cabling required to connect a multi-viewer to an external serial device (such as a router, production switcher, or router controller) can vary from one device to another. It is important to check the manufacturer's documentation to get the proper pinout so it matches up with the multi-viewer.

The RS-422 ports at the back of a Kaleido-X16 multi-viewer or at the back of a KXO-Dual or KXO-Dual3 card (in the case of the Kaleido-X multi-viewer models) use an RJ-45 connector. Miranda provides two adapters, which map the RS-422 signals to the more common DE-9 form factor:



- To connect a serial device whose RS-422 port is wired to the SMPTE *slave* wiring specifications, use the **straight** adapter (Miranda part number **1737-3000-102**).

- To connect a serial device whose RS-422 port is wired to the SMPTE *master* wiring specifications, use the **crossover** adapter (Miranda part number **1792-3700-100**).

The DE-9S pinouts for these two adapters are as follows:

Pin	Straight adapter (1737-3000-102)	Crossover adapter (1792-3700-100)
1	Not connected	Not connected
2	RX–	TX–
3	TX+	RX+
4	Not connected	Not connected
5	Not connected	Not connected
6	Not connected	Not connected
7	RX+	TX+
8	TX–	RX–
9	Not connected	Not connected

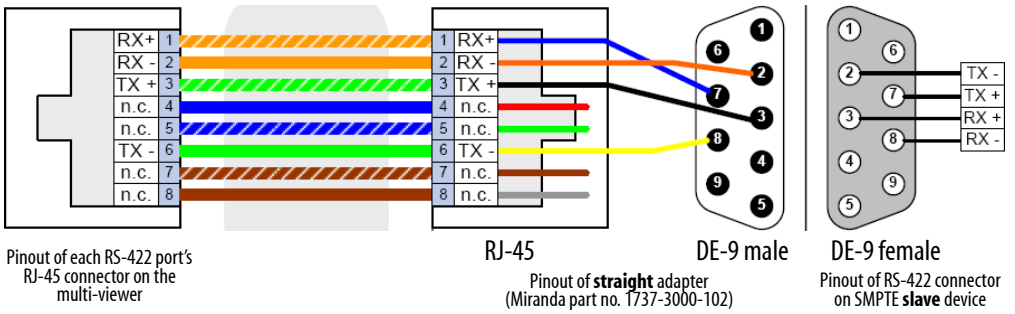
Note: Some routers have RS-232 ports, which will require the use of a RS-232 to RS-422 converter (externally powered ones work best).

Sample Third-Party Serial Pinouts

Example #1: Ross Synergy100 (RS-422)

1	Not connected	4	Ground	7	TX+
2	TX–	5	Ground	8	RX–
3	RX+	6	Not connected	9	Not connected

The Miranda 1737-3000-102 (**straight**) adapter can be connected directly to the Ross Synergy 100:

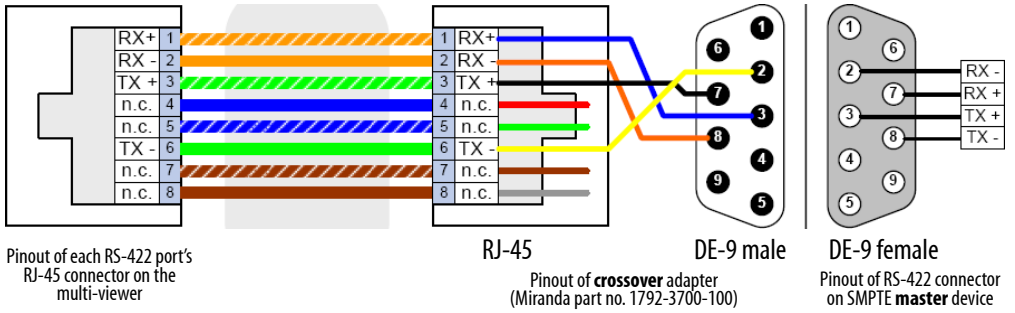


Standard wiring between multi-viewer and Ross Synergy switcher wired to SMPTE "slave" specification

Example #2: Philips VM-3000 (RS-422)

1	Ground	4	Not connected	7	RX+
2	RX–	5	Not connected	8	TX–
3	TX+	6	Not connected	9	Not connected

The Miranda 1792-3700-100 (**crossover**) adapter can be connected directly to the Philips controller:



Standard wiring between multi-viewer and devices wired to SMPTE "master" specification (e.g. Philips Jupiter router control system, Miranda Presmaster PCS)

Alternatively, use the Miranda 1737-3000-102 (straight) adapter but with a crossover cable between the multi-viewer and the adapter.

Q & A

Q: Is the internal router used to change inputs to the multi-viewer in order to direct signals to the monitor wall?

A: No, an internal router card is not needed to display video on the monitor wall. The outputs of the internal router do not feed into the multi-viewer's inputs—they come *from* the multi-viewer's inputs via the midplane.

Q: What is the main purpose of having an internal router?

A: The internal router allows you to share the inputs connected to a Kaleido-X or Kaleido-X16 multi-viewer with other equipment (e.g. QA monitors, vectorscopes), reducing or eliminating the need to have an expensive standalone external router. The internal router allows you to have one piece of equipment (the multi-viewer) that serves two integrated purposes: displaying video inputs on the monitor wall, and sharing them with other equipment. For example, instead of having a router in front of the multi-viewer to split feeds between the multi-viewer and a vectorscope monitor, you can use the multi-viewer as a router. Your feeds enter at a single point, and one of the outputs can go to a vectorscope or quality control (QC) monitor, so that instead of a large, expensive station router in front you can have a smaller one—you don't lose outputs for QC.

Q: Is there a matrix GUI available for controlling routers via the multi-viewer?

A: Yes. The Kaleido-X Software (version 4.00 and later) incorporates the single bus and matrix view from iControl Router Control Software.

Q: Is the "External Router" item in the Equipment library always used to add a router?

A: Yes. This is done for consistency with iControl. Other types of equipment (production switchers, controllers, tally boxes) have their own specific entries in the Equipment library.

Q: Can there be more than one external router?

A: Yes. Every router or router control panel that is connected to a serial port on the multi-viewer corresponds to an *External Router* in XEdit. Similarly, every router with a unique IP address connected via TCP/IP to the multi-viewer is considered a unique External Router. If the multi-viewer is connected to a series of physical routers in a cascade configuration, the cascade corresponds to a single External Router in XEdit, where each router is a *Level*.

Q: Why was the iControl Router Manager integrated into XEdit version 3.00?

A: Previously, a version of the iControl Router Manager appeared as a separate application within XEdit. This could lead to some issues, such as two devices being configured on the same serial port. Since Router Manager is now integrated, XEdit is more "aware" of the router configuration information, and can prevent such misconfigurations.

Q: Is router management backward compatible?

A: Yes. Router configurations made in version 2.20 will be preserved when upgrading to version 3.00 (or later). However, even though this has been tested on a large number of configurations, it is recommended that the router settings be reviewed before and after the upgrade in order to ensure that there are no errors.

Q: What is a "Network router"?

A: The phrase "Network router" has the obvious connotation of a router available on a network. However, in the context of Miranda's Monitoring and Control applications, it can also refer to a device now manufactured by Nevion (www.nevion.com)—formerly Network Electronics Ltd.—such as a VikinX router.

Q: What are the three different Router Controller items (i.e. Network Compact and the two Pro-Bel items) in the Equipment library?

A: They are all used for controlling either the multi-viewer's internal router, or any logical router.[1] The only difference is the protocol used to communicate with the multi-viewer.

Q: My internal router card shows up in the Routers list in XEdit as "OPTION A (Video 120 × 48)". Does this mean it has 120 inputs and 48 outputs?

A: No. Each card can route up to 96 inputs to 24 physical outputs, and so has an actual size of 96 × 24. "120 × 48 "refers to the size of the router card when including other internal connections that are used for router expansion.

Detailed Directions

Configuring an External Router

The process of creating and configuring an external router (e.g. a third-party router or router control panel) for use with your Kaleido-X system consists of 4 steps:

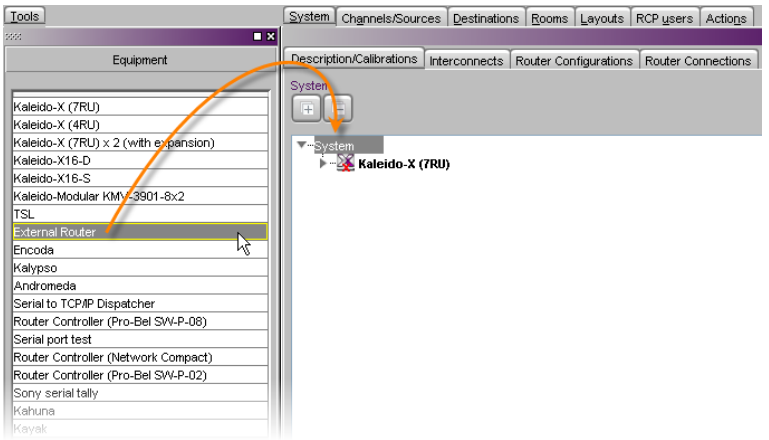
- defining the physical router
- adding one or more physical levels
- creating one or more logical routers
- adding one or more logical levels

1. Controlling a logical router from an upstream router control device or application is supported since version 3.00 of the Kaleido-X Software.

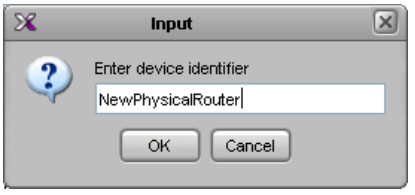
Step 1 – Defining a Physical Router

To configure an external router:

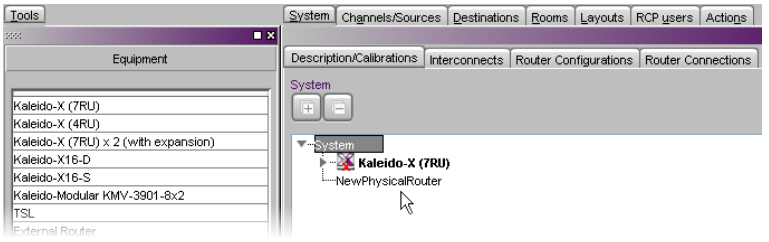
1. Launch XEdit and open the database associated with the multi-viewer for which you wish to configure an external router.
2. Drag **External Router** from the **Equipment** library onto the root of the System hierarchical list in the **Description/Calibrations** pane:



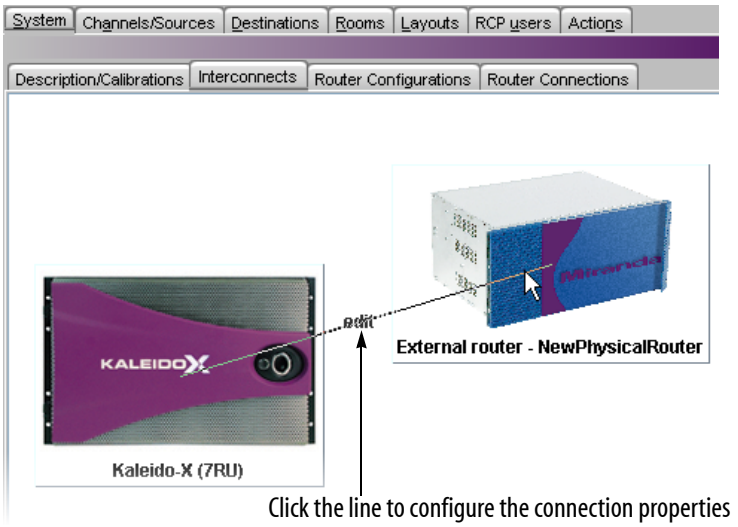
3. Enter a descriptive name to act as a device identifier for the external (physical) router:



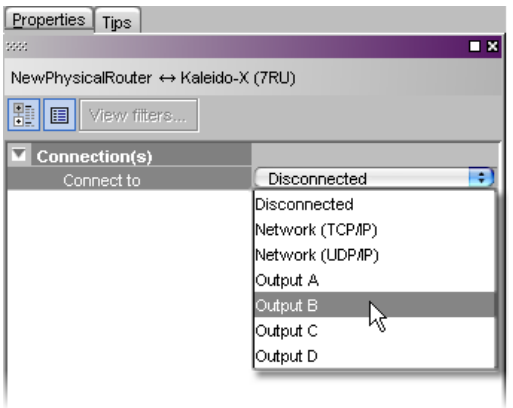
A new physical router appears in the System list:



4. Click the **Interconnects** tab, draw a line between the multi-viewer and the External Router icons to establish a connection (i.e. add a connection properties entry to the database), and then click the line.



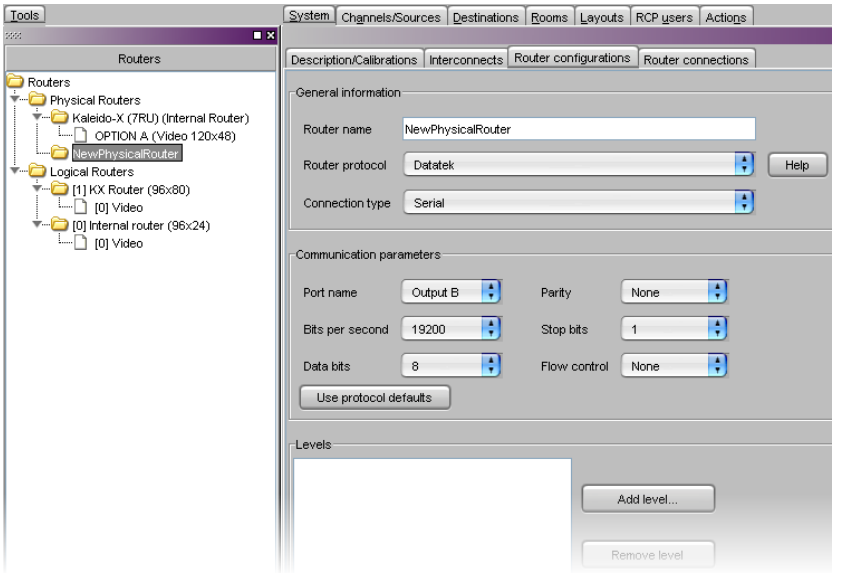
5. In the **Properties** tab, choose a connection type from the **Connect to** list. This can be a serial port connection to one of the multi-viewer's outputs (on a Kaleido-X each KXO-Dual or KXO-Dual3 card has one RS-422 port which can be used for this purpose), or a network (TCP/IP or UDP/IP) connection.



   At this point, there are still no properties associated with the new physical router.

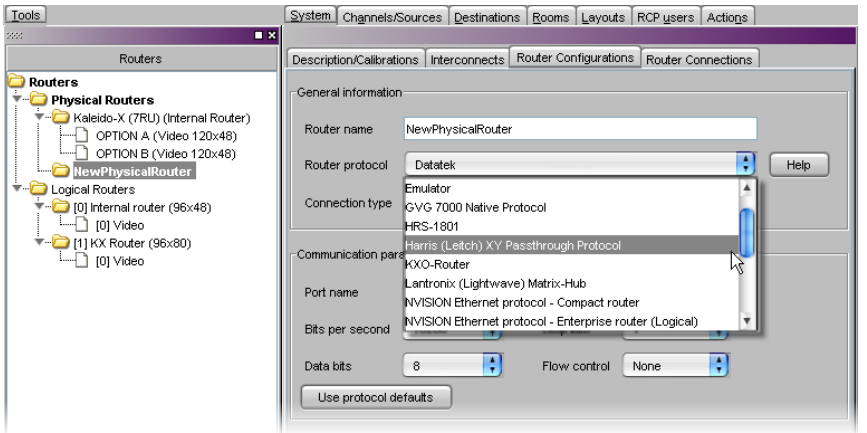
6. Click the **Router Configurations** tab.

   Notice that, in the **Routers** list, under **Physical Routers**, XEdit has added the new physical router.



Note: A physical router associated with the multi-viewer's own internal router module is also predefined. In the case of a Kaleido-X (7RU) multi-viewer that does not have any router card, there will be no entries in the **Levels** list for this physical router).

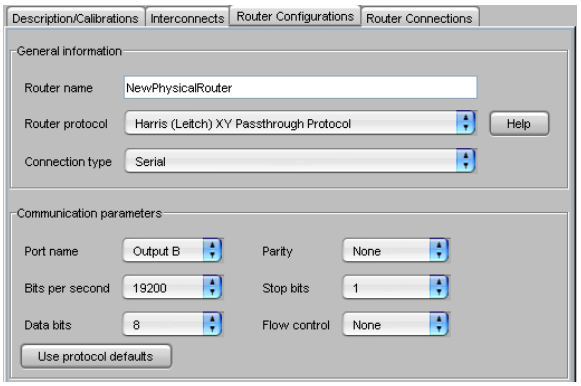
7. Select the appropriate protocol in the **Router protocol** list:



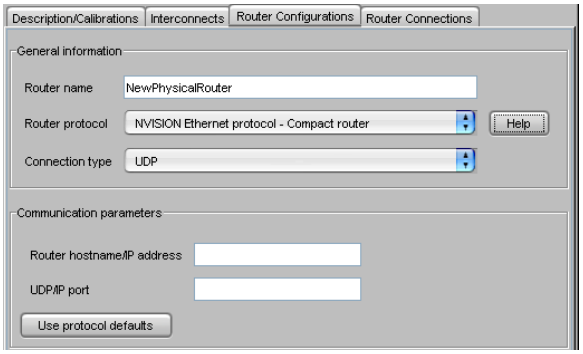
Once you have chosen a protocol, you can click **Help** to view tips on its use.

Note: The connection type and multi-viewer output specified earlier (in the **Properties** tab) appear here automatically. These values can be changed, if necessary. Any changes will also appear under the **Properties** tab.

– In the case of a serial connection, you can specify serial communication parameters: the bit rate (bps), the number of data bits, parity, stop bits and flow control:



– If the connection type is **TCP/IP** or **UDP/IP**, you must specify the router's IP address and port number:



8. Click **Use protocol defaults** to specify the default parameters for the selected protocol (this can be useful to begin if you do not have access to your specific router's documentation).

   At this point, you have created a new physical router.

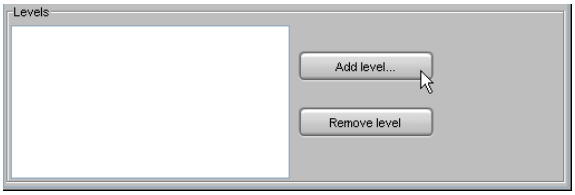
Step 2 – Adding Physical Levels

There is not always just one connection per router. Sometimes, the connection is to one of several routers in a cascade configuration. For example, in the case of Nevion (Network Electronics) VikinX routers, the multi-viewer sends commands to one router in the cascade, which passes it on to the other routers via an internal communications mechanism (MIDI in this case). Each router in the cascade has an ID. To represent this arrangement in XEdit, the router connected to the multi-viewer is considered the *physical router*, with all of the routers in the cascade represented by a *physical level*.

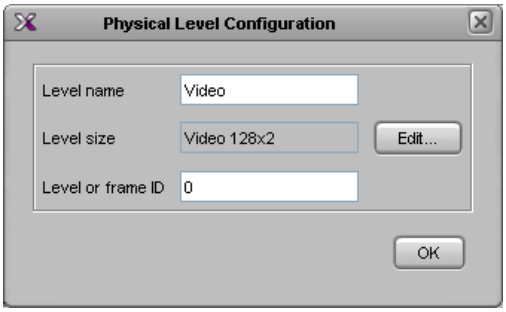
Even if the multi-viewer is connected directly to a router (i.e. no intermediary device), you still use the mechanism of defining a physical level. The distinction here is that there would only be one physical level.

To add one or more physical levels:

1. In the **Router Configurations** tab, click **Add level**:



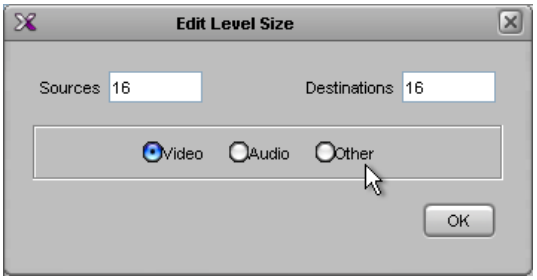
2. In the **Physical Level Configuration** window, type a **Level name** (e.g. "Video"):



3. Type the appropriate value in the **Level or frame ID** box (whether a *level ID* or a *frame ID* is relevant depends on the protocol in use).

> **Note:** This value identifies and must match the ID of the physical router in a cascade (there is sometimes a jumper on the router that is used to set its ID, or it may be done by changing a configuration setting using software that comes with the router). The Kaleido-X Software uses this ID to issue a command via the serial port (e.g. "Change this crosspoint on router ID 2"). When the command is sent to routers on a MIDI bus, each router will examine the command, check its ID, and ignore it unless the ID matches its own.

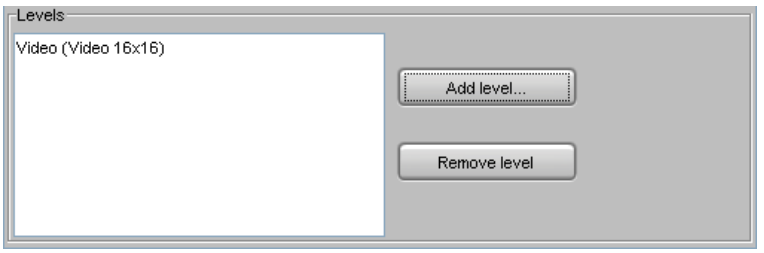
4. Click **Edit**.
5. In the **Edit Level Size** window, type the number of sources and destinations associated with the physical router:



> **Note:** The three option buttons labeled **Video**, **Audio** and **Other** are used for Nevion (Network Electronics) routers only, for which levels must be classified as either **Video** or **Audio**. These settings are ignored by routers from other manufacturers.

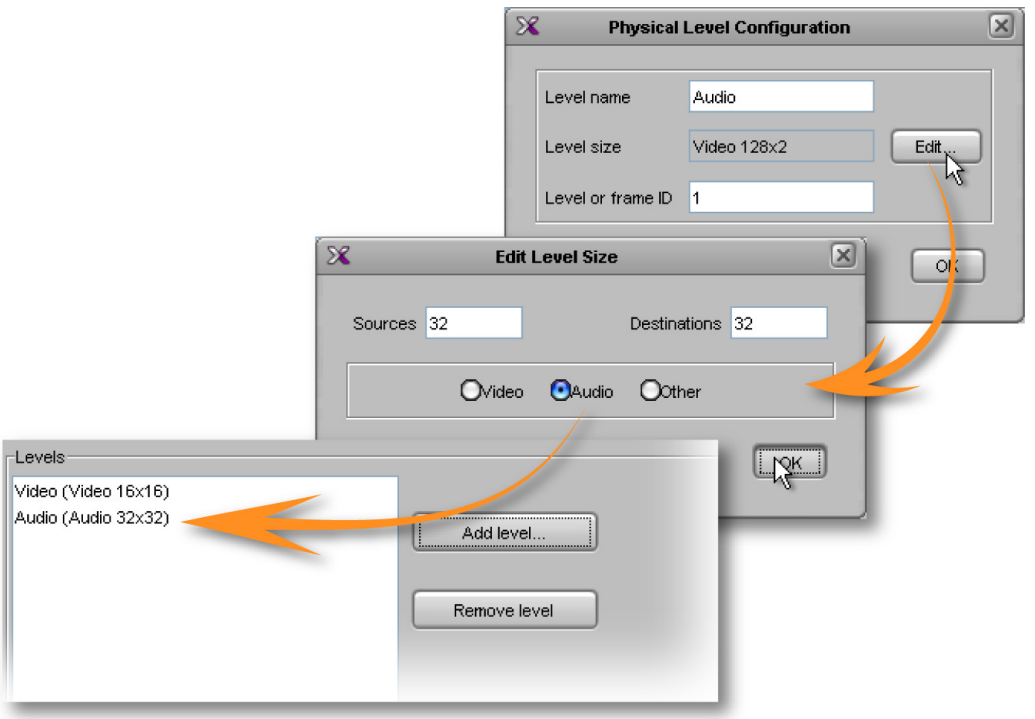
6. Click **OK**, and then click **OK** again in the **Physical Level Configuration** window.

At this point, you have added a level to a physical router, which appears in the **Levels** list under the **Router Configurations** tab.



For example, if the physical router is a controller talking to a cascade of routers using a specified protocol, you might have defined one of these, a video router, as Level 0 in the cascade, with 16 sources and 16 destinations (16 × 16).

7. You can continue to add levels for other routers in the cascade. The screens below, for example, show how to define a 32 × 32 level for a Nevion (Network Electronics) audio router:



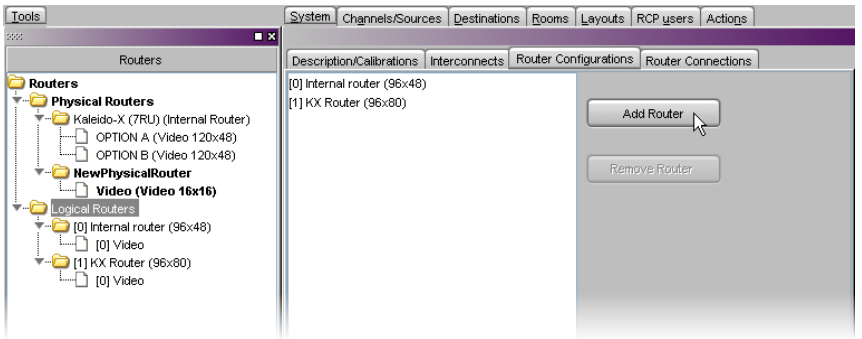
It is fairly typical to have an audio and a video router connected to the same serial port. When a crosspoint switch is sent out over the serial port, it addresses both routers, so that the audio follows the video switch.

Step 3 – Adding Logical Routers

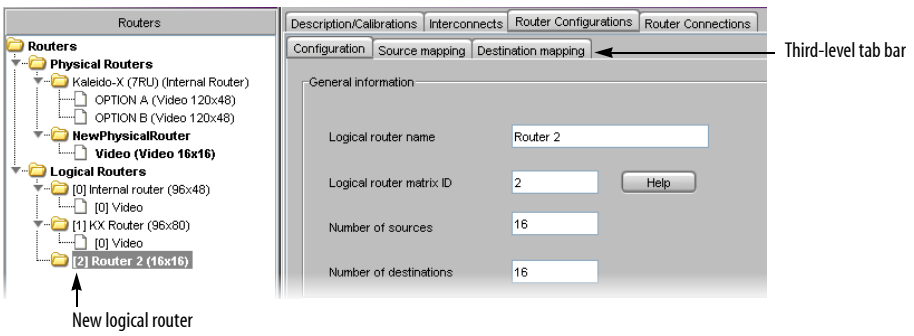
Logical routers add another layer of refinement over the control of a router. In a typical situation, a very large router (e.g. 1024 × 1024) might be used to control a TV station. The station manager does not want

just anyone to be able to change any source to any destination, because some of these destinations go straight to air. If someone accidentally changes a crosspoint on the monitor wall, and the feed goes live, the error could have serious consequences. To avoid such problems, it is desirable to give operators access only to those crosspoints they need, by creating logical routers.

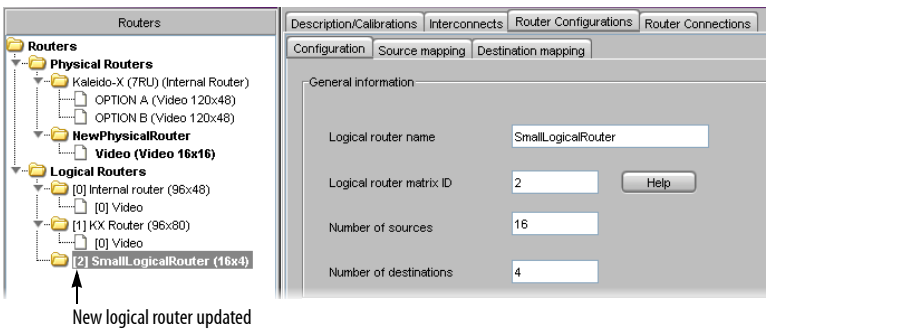
1. In the **Routers** list, click the **Logical Routers** folder, and then click **Add Router** under the **Router Configurations** tab:



A new sub-folder is added to the **Logical Routers** folder. Since this new folder is automatically selected, a third-level tab bar appears under **Router Configurations**, with the **Configuration** tab selected:



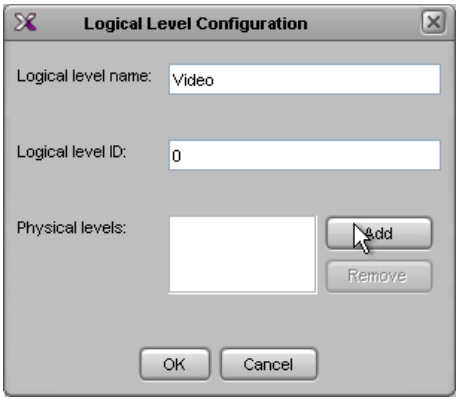
2. Type a name (e.g. "SmallLogicalRouter") in the **Logical router name** box. This is the name that will appear on monitor wall in the **Assign [router] input** menu. Ignore the **Logical router matrix ID** box for now. Type the number of sources and destinations (e.g. 16 × 4):



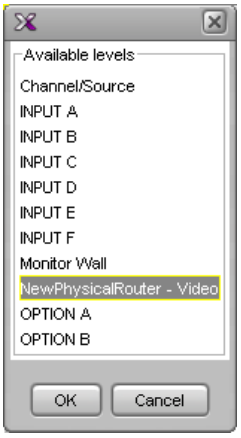
The subfolder that represents the new logical router is renamed automatically, reflecting your changes.

> **IMPORTANT:** **Once you have configured the logical router, it is important not to change its name.** Doing so will disable any settings that refer to the existing router name, including:
> - logical source assignments for source or destination label,
> - external router connection configurations,
> - monitors and background actions associated with the logical router,
> - automatic crosspoint changes on video monitors (router source property).
>
> **Note:** If you change the name back to the original, everything should work as before.

3. Click **Add level**.
4. In the **Logical Level Configuration** window, type a **Logical level name** (e.g. "Video"). The **Logical level ID** is not important at this point.

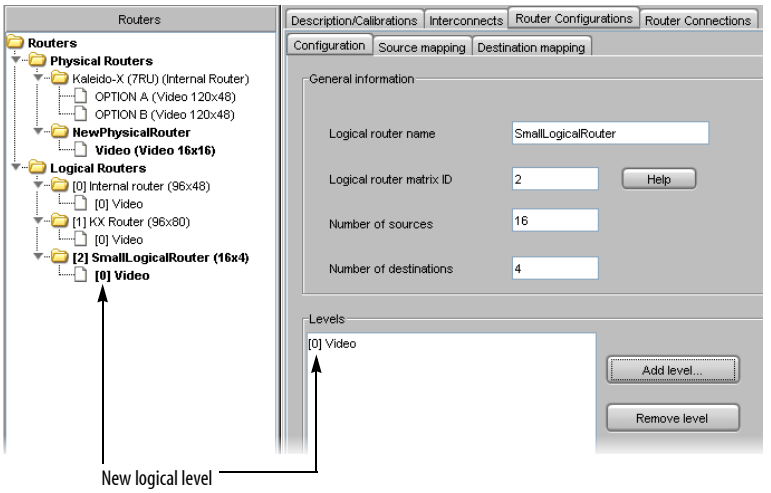


5. The logical level must be associated with a physical router level. Click **Add**, and then select a physical level from the list that appears:



6. Click **OK**, and then click **OK** again in the **Logical Level Configuration** window.

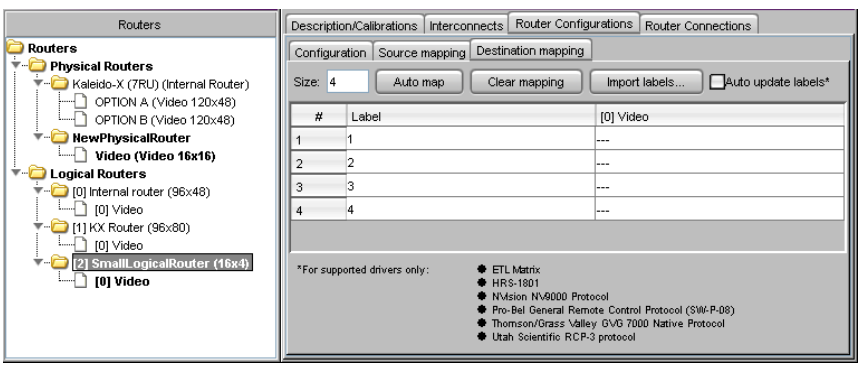
The new logical level appears in the **Levels** list, and also under the new sub-folder that represents the logical router in the Routers list.



Next, you must specify the relationship between the logical level destinations (4 in this example) and the physical destinations (16 in this example).

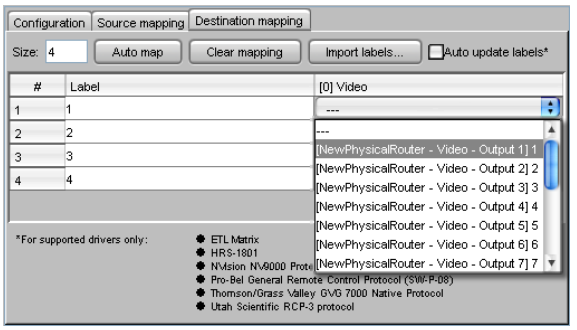
7. Click the **Destination mapping** tab.

   The Destination mapping table includes rows for each of the logical destinations (4 in this example), with columns for entering a text label (e.g. "Main Out", "Preview", etc.) and the corresponding physical router destination (this column's heading corresponds to the logical router level specified earlier–"[0] Video" in this example):

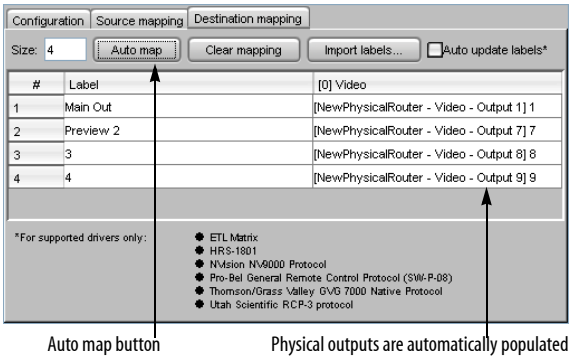


8. Click in a row in the physical level column.

   A menu appears listing all of the available outputs associated with that physical level:



9. Choose a physical output for each logical destination.
10. Click **Auto map** to automatically enter physical outputs, in sequential order, starting from the first one in the list:



   – If you have already specified a physical output, the sequence starts from that one, then autofills from there.
   – If the one you specified is in a row part way down the table, auto-mapping fills in the rows below, then continues the sequence starting at the top of the table.

   This feature is particularly useful when mapping a large number of destinations.

> **Note:** If you make a mistake, click **Clear mapping**, and then click **Yes** in the confirmation message that appears to delete the table entries in the physical output column. This does not affect the **Labels** column.

11. To import labels from a CSV file (i.e. a comma-delimited file such as might be exported from an Excel spreadsheet), click **Import labels**, navigate to the CSV file that contains the labels you wish to import, select it, and then click **Open**.

Note: The file must be formatted as three columns with no header row. Column 1 should contain numbers from 1 to N (the number of sources), column 2 should contain the source labels, and column 3 should contain the destination labels. Columns are delimited by commas, without spaces. Sample label file:

```
1,VTR 1,OUT 1
2,VTR 2,OUT 2
3,CAM 1,OUT 3
4,CAM 2,OUT 4
5,SAT 1,PGM
6,SAT 2,PVW
```

Alternatively, select the **Auto update labels** check box, to import labels directly from a router at runtime.

Note: Labels are imported at runtime (i.e. they only appear on the monitor wall, not in XEdit). This feature applies to the following router protocols only:

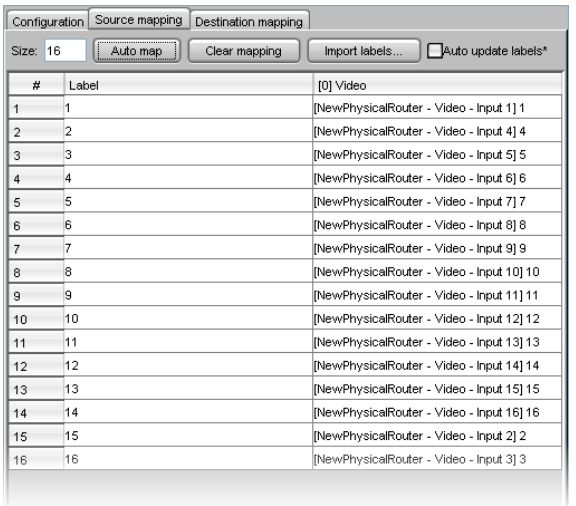
- ETL Matrix
- Evertz Quartz Type 1
- HRS-1801
- NVISION Ethernet protocol - Enterprise router
- Snell (Pro-Bel) General Remote Control Protocol (SW-P-08)
- Thomson / Grass Valley GVG 7000 Native Protocol
- Utah Scientific RCP-3 Protocol

The list of supported protocols appears at the bottom of the **Source mapping** and **Destination mapping** tabs.

As with destinations, the sources of the logical level must be associated with sources on the physical router.

12. Click the **Source mapping** tab. The table works in the same way as for outputs, except that the number of rows is determined by the number of sources specified when the logical level was created.

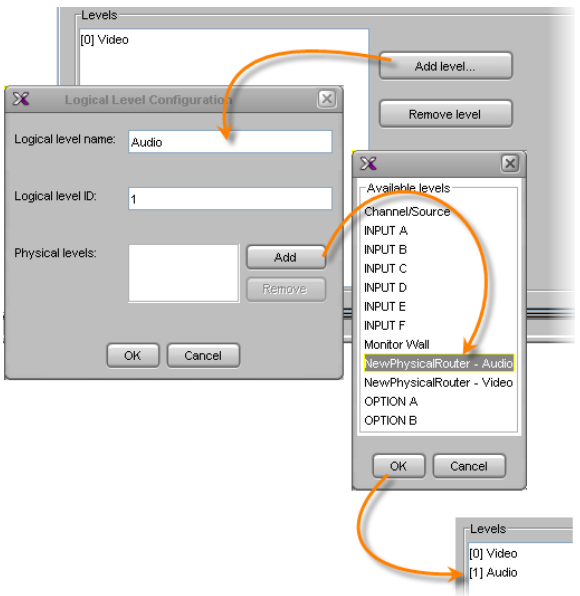
    Auto mapping example: Specify Input 4 in Row 2, then click **Auto map**. The auto mapper starts by putting Input 1 in Row 1, detects the entry in Row 2, so picks up the sequence by putting Input 5 in Row 3, Input 6 in Row 4, etc.:


Configuration
Source mapping
Destination mapping
Size: 16
Auto map
Clear mapping
Import labels...
Auto update labels*
| Label | [0] Video
1 | 1 | [NewPhysicalRouter - Video - Input 1] 1
2 | 2 | [NewPhysicalRouter - Video - Input 4] 4
3 | 3 | [NewPhysicalRouter - Video - Input 5] 5
4 | 4 | [NewPhysicalRouter - Video - Input 6] 6
5 | 5 | [NewPhysicalRouter - Video - Input 7] 7
6 | 6 | [NewPhysicalRouter - Video - Input 8] 8
7 | 7 | [NewPhysicalRouter - Video - Input 9] 9
8 | 8 | [NewPhysicalRouter - Video - Input 10] 10
9 | 9 | [NewPhysicalRouter - Video - Input 11] 11
10 | 10 | [NewPhysicalRouter - Video - Input 12] 12
11 | 11 | [NewPhysicalRouter - Video - Input 13] 13
12 | 12 | [NewPhysicalRouter - Video - Input 14] 14
13 | 13 | [NewPhysicalRouter - Video - Input 15] 15
14 | 14 | [NewPhysicalRouter - Video - Input 16] 16
15 | 15 | [NewPhysicalRouter - Video - Input 2] 2
16 | 16 | [NewPhysicalRouter - Video - Input 3] 3

IMPORTANT: **You can have the same physical sources and destinations mapped to multiple logical routers. The software does not prevent this. In the case of destinations, care must be taken to avoid conflicts when using auto mapping.**

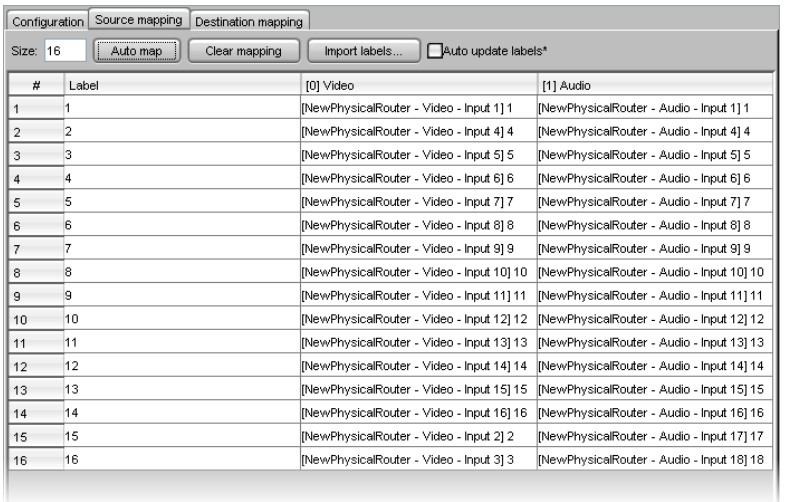
At this point, you have completed the source and destination mapping for a logical level (e.g. "[0] Video"). Additional levels can be created. For example, it is often necessary to switch the audio at the same time as the video. If you have a video router and an audio router, and you select Video 2 on the former, you probably want the associated audio to switch as well. To accomplish this, define a new logical level for the audio:

13. Create a new logical level (e.g. "[1] Audio"), and associate it with a physical router Audio level:



14. Click the **Destination mapping** tab.

A new column appears, corresponding to the new logical Audio level. The audio destinations can be mapped to correspond to the video destinations. The same applies when it comes to mapping sources:



#	Label	[0] Video	[1] Audio
1	1	[NewPhysicalRouter - Video - Input 1] 1	[NewPhysicalRouter - Audio - Input 1] 1
2	2	[NewPhysicalRouter - Video - Input 4] 4	[NewPhysicalRouter - Audio - Input 4] 4
3	3	[NewPhysicalRouter - Video - Input 5] 5	[NewPhysicalRouter - Audio - Input 5] 5
4	4	[NewPhysicalRouter - Video - Input 6] 6	[NewPhysicalRouter - Audio - Input 6] 6
5	5	[NewPhysicalRouter - Video - Input 7] 7	[NewPhysicalRouter - Audio - Input 7] 7
6	6	[NewPhysicalRouter - Video - Input 8] 8	[NewPhysicalRouter - Audio - Input 8] 8
7	7	[NewPhysicalRouter - Video - Input 9] 9	[NewPhysicalRouter - Audio - Input 9] 9
8	8	[NewPhysicalRouter - Video - Input 10] 10	[NewPhysicalRouter - Audio - Input 10] 10
9	9	[NewPhysicalRouter - Video - Input 11] 11	[NewPhysicalRouter - Audio - Input 11] 11
10	10	[NewPhysicalRouter - Video - Input 12] 12	[NewPhysicalRouter - Audio - Input 12] 12
11	11	[NewPhysicalRouter - Video - Input 13] 13	[NewPhysicalRouter - Audio - Input 13] 13
12	12	[NewPhysicalRouter - Video - Input 14] 14	[NewPhysicalRouter - Audio - Input 14] 14
13	13	[NewPhysicalRouter - Video - Input 15] 15	[NewPhysicalRouter - Audio - Input 15] 15
14	14	[NewPhysicalRouter - Video - Input 16] 16	[NewPhysicalRouter - Audio - Input 16] 16
15	15	[NewPhysicalRouter - Video - Input 2] 2	[NewPhysicalRouter - Audio - Input 17] 17
16	16	[NewPhysicalRouter - Video - Input 3] 3	[NewPhysicalRouter - Audio - Input 18] 18

If the audio mapping mirrors the video mapping, then, when a video switch is made (e.g. from Video 1 to Video 2), the corresponding audio will follow (i.e. the same command will switch a crosspoint in both the physical video router and the physical audio router).

Note: Miranda's Router Control Software includes applications for controlling routers (single bus and matrix) where you can operate in *all follow* mode (change all levels), or in *breakaway* mode. When you make a crosspoint change in a logical router, you can change all of the logical levels, or just specific ones. **When controlling the monitor wall, only the "all follow" mode is supported.** If you need to set up breakaway switches, you must use other software—e.g. Miranda's Router Control Software—, or a router controller—e.g. a device that supports the Snell (Pro-Bel) SW-P-08 protocol.

At this point, you have completed the definition of an external router.

Configuring a Router Controller

There are two categories of router controllers that can be used to control the routers connected to (controlled by) a Kaleido-X:

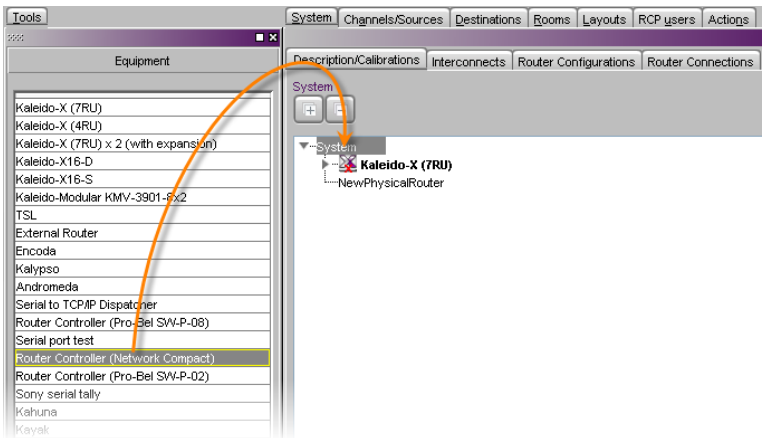
- Simple router controllers, such as the Nevion (Network Electronics) VikinX Compact, or devices that support the Snell (Pro-Bel) SW-P-02 protocol.
- Intelligent router controllers that support the Snell (Pro-Bel) SW-P-08 protocol.

Adding a Simple Router Controller

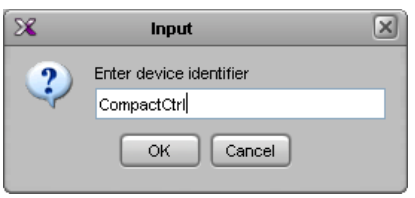
A VikinX Compact router controller, on any control panel that supports the Snell (Pro-Bel) SW-P-02 protocol, can issue switching commands to a specific router connected to (controlled by) the multi-viewer, which will act as a *protocol translator*.

To add a VikinX Compact (or equivalent) router controller:

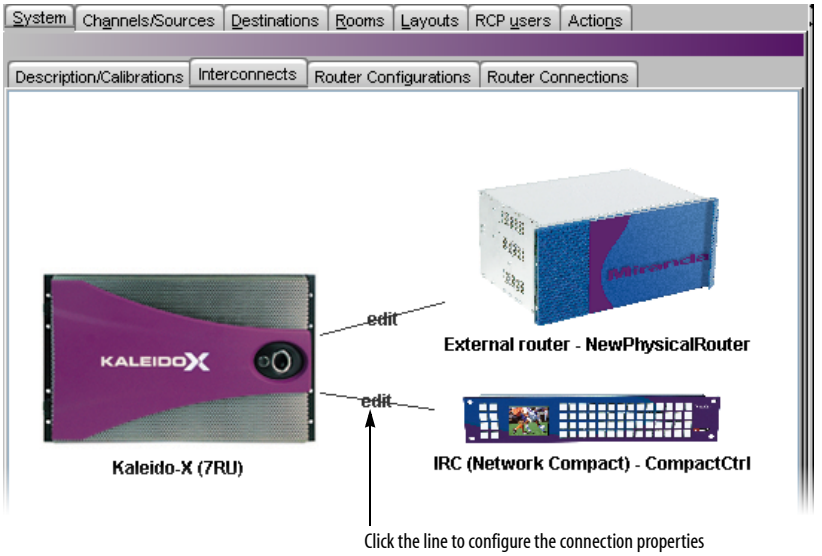
1. Click and drag **Router Controller (Network Compact)** from the **Equipment** library to the System hierarchical list:



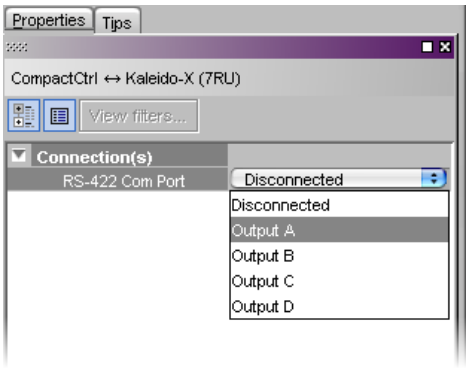
2. When prompted, type a name, and then click **OK**:



3. Click the **Interconnects** tab, draw a line between the multi-viewer and the new router controller, and then click the line:

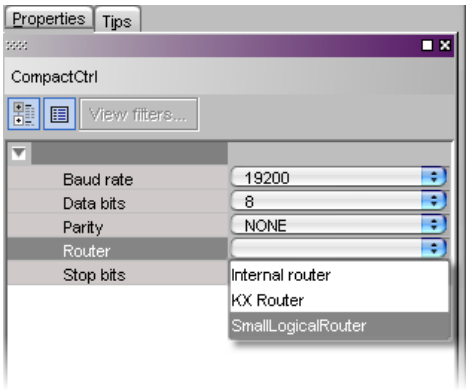


4. In the **Properties** tab, click the **RS-422 Com Port** box, and then choose a multi-viewer output from the list:



> **Note:** Simple router controllers can also communicate with Kaleido-X via TCP/IP. This type of connection is enabled automatically, and allows such controllers to issue commands to the multi-viewer's internal router module.

5. In the **Interconnects** tab, click the router controller icon. Under the **Properties** tab, a list of settings appears, with default values for the serial communication parameters: the bit rate (bps), the number of data bits, parity, stop bits and flow control. Select a logical router (e.g. SmallLogicalRouter) from the **Router** list:



This is the logical router that will be controlled by the router control panel. When the multi-viewer receives commands over the serial port on the output card selected in step 4, it will know these are destined for the logical router corresponding to "SmallLogicalRouter".

> **Note:** The VikinX Compact protocol allows you to specify one logical router only (it is a one-to-one controller protocol).

To add a control panel that uses the SW-P-02 protocol:

- Refer to procedure above but, at step 1, select **Router Controller (Pro-Bel SW-P-02)** from the Equipment library instead of **Router Controller (Network Compact)**.

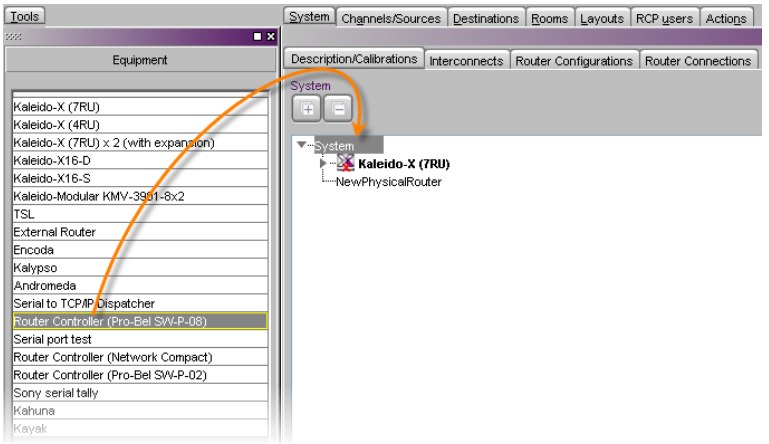
Adding an Intelligent Router Controller

An intelligent router controller is one that can issue switching commands to any router connected to (controlled by) the multi-viewer. In order to be able to do this, it must attach a unique identifier to each command that will allow the Kaleido-X Software to direct the command to the appropriate device. This unique identifier is the "Logical router matrix ID", which is similar to the "Level or frame ID" for a physical router, but identifies a logical router.

So, for example, if you press a button on the external panel that is set up to make a crosspoint change on logical router matrix ID 0, the Kaleido-X Software will receive this command, look up matrix ID 0 to find the physical router it is mapped to, and then forward the crosspoint change to the physical router using the appropriate protocol. In such cases, the Kaleido-X Software acts as a "protocol translator" for the control panel.

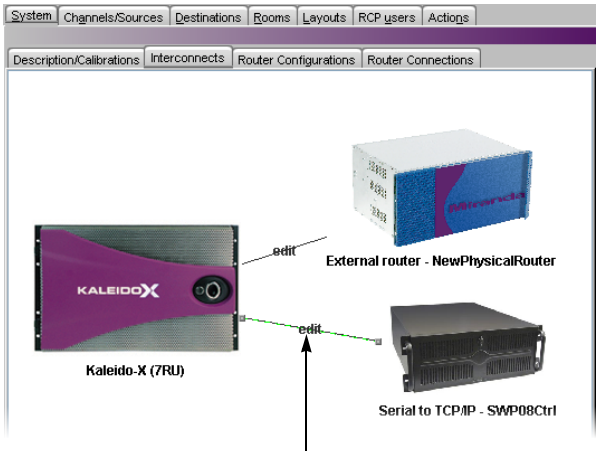
To add a Snell (Pro-Bel) SW-P-08 (or equivalent) router controller:

1. Click and drag **Router Controller (Pro-Bel SW-P-08)** from the **Equipment** library to the System hierarchical list:



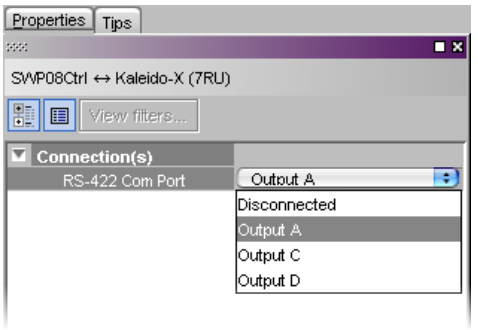
2. When prompted, type a name for the router controller, and then click **OK**:

3. Click the **Interconnects** tab, draw a line between the multi-viewer and the new router controller, and then click the line:

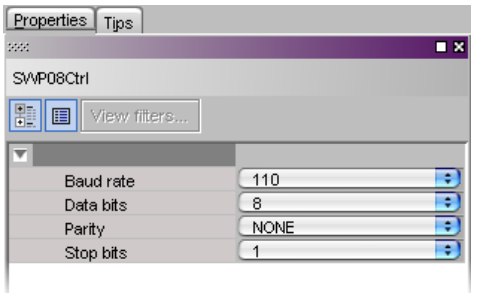


Click the line to configure the connection properties

4. In the **Properties** tab, click the **RS-422 Com Port** box, and then choose a multi-viewer output from the list:

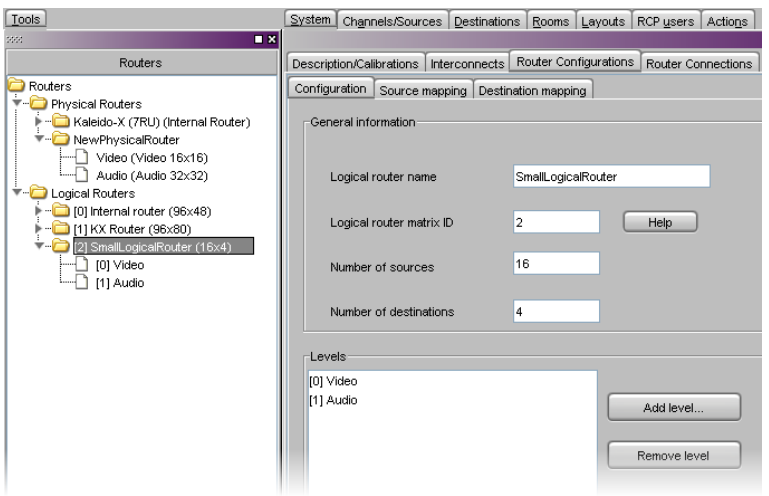


5. In the **Interconnects** tab, click the router controller icon. Under the **Properties** tab, a list of settings appears, with default values for the serial communication parameters: the bit rate (bps), the number of data bits, parity, stop bits and flow control:



However, in this case, there is no **Router** box for specifying which logical router is to be controlled. This is because the SW-P-08 protocol allows the controller to pass the identifier for the logical router with a command (i.e. it tells the multi-viewer to make a crosspoint change for logical router X). The ID that it passes is the logical router matrix ID (refer to "Step 3 – Adding Logical Routers" on page 285).

6. Click the **Router Configurations** tab to view (or set) the logical matrix ID:



Notes

- The logical router matrix ID must be manually entered on the Snell (Pro-Bel) controller—this is usually done via a Web interface, but is sometimes done over a serial connection. Some controllers allow you to program individual buttons, or groups of buttons.
- The Snell (Pro-Bel) controller can also use the logical router level IDs (e.g. [0] Video, [1] Audio) when it sends commands, allowing you to target just video crosspoints, just audio crosspoints, or both.

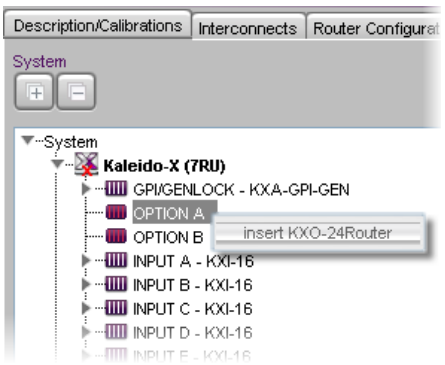
IMPORTANT: You must always configure a logical router for a physical external router. There is no way to control a physical external router directly.

Configuring Internal Router Cards

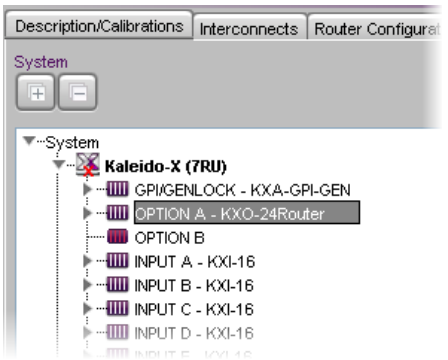
The KXO-24Router card provides 24 external monitoring outputs that can route any of the 96 HD/SD SDI inputs of the Kaleido-X (7RU). Two cards can be installed in a Kaleido-X (7RU) to provide up to 48 outputs. These unprocessed outputs can be used to feed high-quality CRT monitors, test equipment such as waveform monitors, as well as master control or production switchers.

To configure internal router cards:

1. Make sure that one or both internal router slots in the System list have a router card installed. To add an internal router card, right-click **OPTION A** or **OPTION B** in the System list, and then click **Insert KXO-24Router** on the shortcut menu:

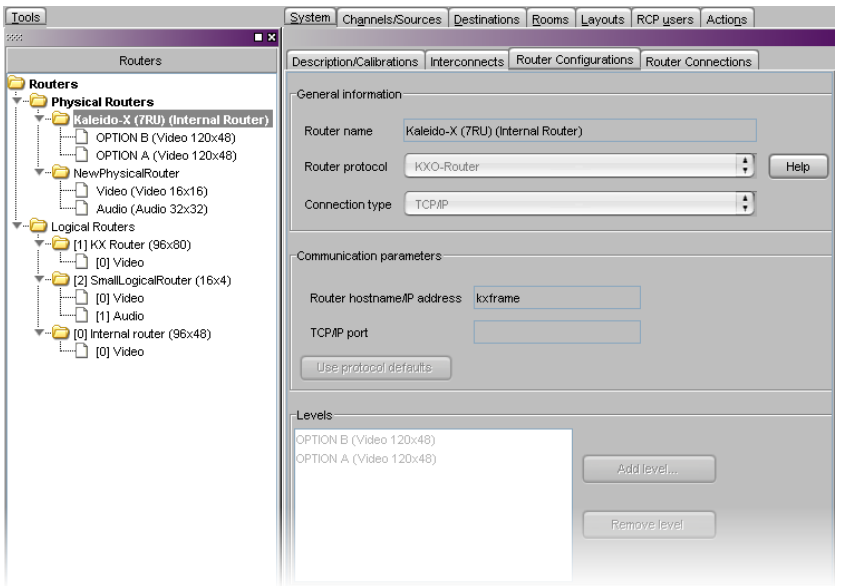


A KXO-24Router card appears in the selected slot:



2. Click the **Router Configurations** tab, and then navigate to the **Kaleido-X (7RU) (Internal Router)** folder under **Physical Routers**, in the **Routers** list.

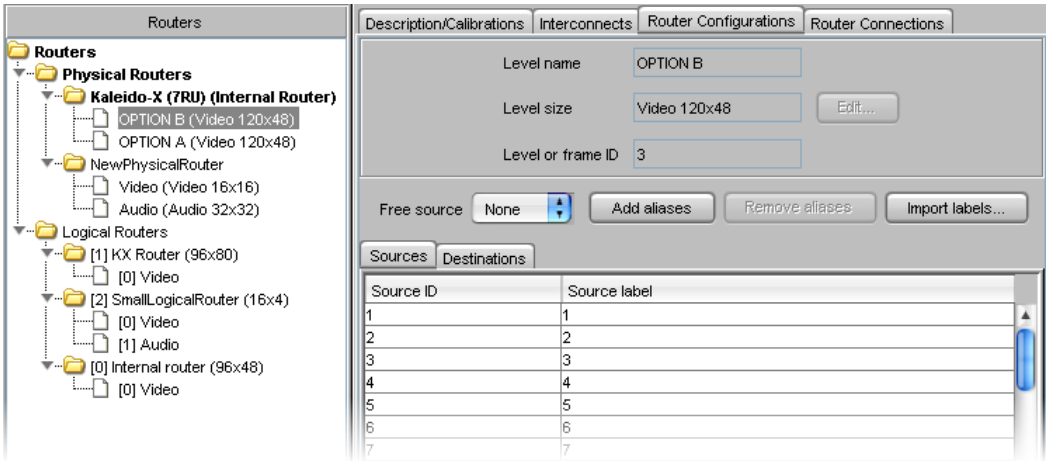
   The router protocol, connection type, host name and levels are predefined (and cannot be modified):



Notes

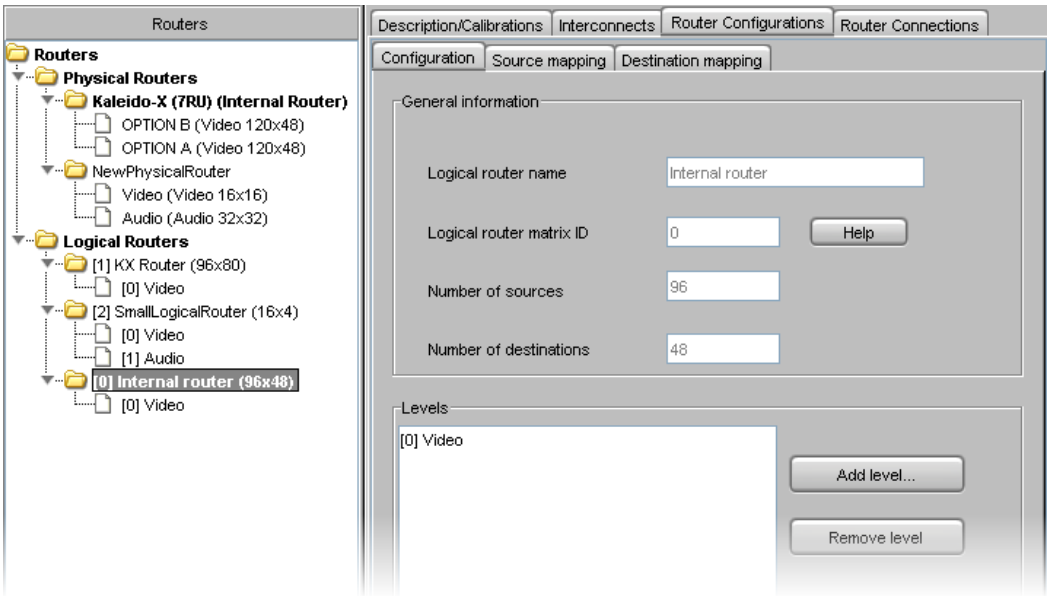
- The following ports are always active and can be used for controlling a Kaleido-X over TCP/IP, via the associated protocols:
  - port 14000 (SW-P-08)
  - port 2000 (SW-P-02)
  - port 4381 (VikinX Modular)
  - port 5194 (NVISION Ethernet protocol - Compact router)
- When controlling a multi-viewer, by using one of the TCP/IP router protocols, the router level to be controlled must be configured in XEdit (see step 5 under "Creating a Single Multi-Viewer System" on page 77). No other communication configuration is required in XEdit.

3. Click **OPTION A** (or **B**) under **Physical Routers** in the Routers list. Note that the physical levels are automatically created—OPTION A (Video 120 × 48) and OPTION B (Video 120 × 48)—and configured to the right size:

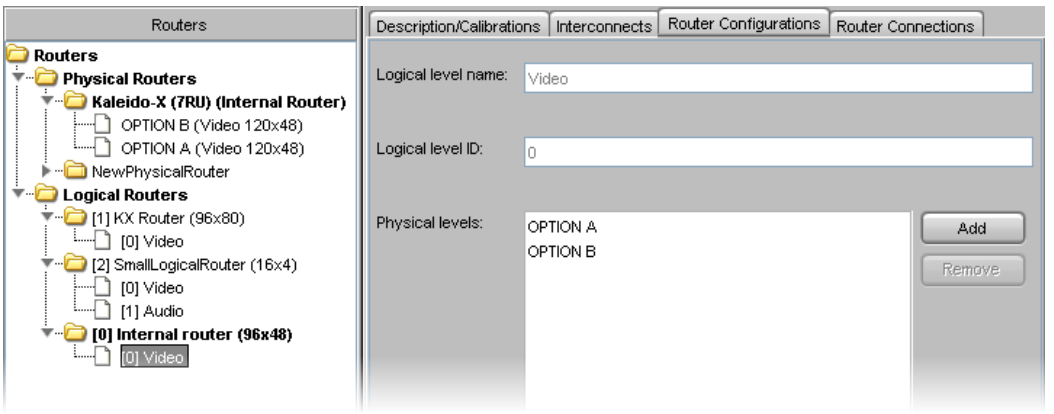


Note: "120 × 48" refers to the physical router size including internal connections used for router expansion. The actual size of each router card is 96 × 24.

4. A Logical router is also automatically defined. Click the **[0] Internal router (96 × 48)** folder under **Logical Routers** in the Routers list. The number of sources and destinations are also predefined, and cannot be modified manually. These numbers are determined by how many input (KXI) cards and internal router cards are defined in the system: 16 sources per input card; 24 destinations per internal router card, for a maximum of 96 × 48 (or 192 × 96 on a Kaleido-X expansion system):



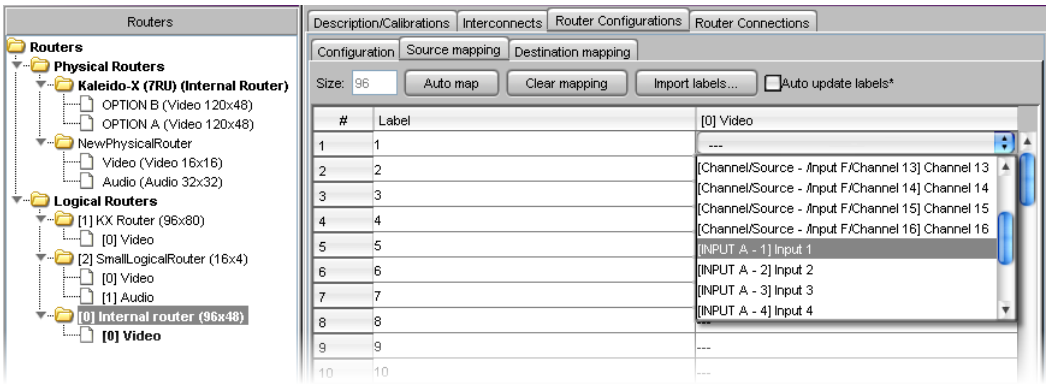
A logical video level ([0] Video) is also defined and automatically mapped to the two predefined physical levels "OPTION B" and "OPTION A":



5. Click the **[0] Internal router (96 × 48)** folder under **Logical Routers** in the Routers list.

   The third-level tab bar appears under **Router Configurations**, with the **Configuration** tab selected.

6. Source and destination mapping is *not* done automatically. Click the **Source mapping** tab, click in the logical level column (e.g. [0] Video), and then choose an input from the menu:

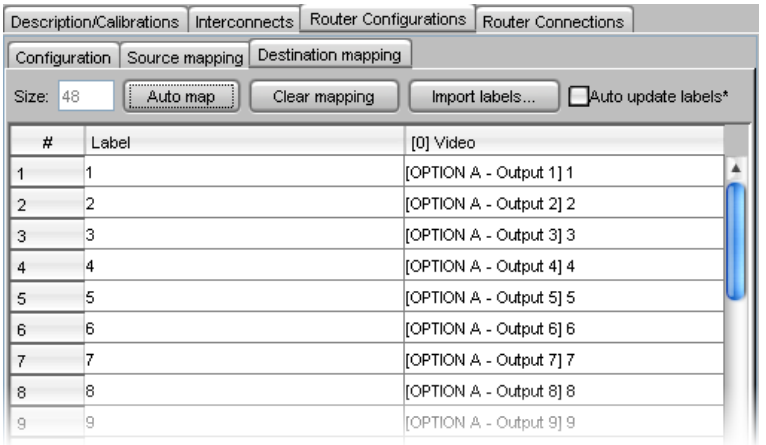


7. To import labels from a CSV file (i.e. a comma-delimited file such as might be exported from an Excel spreadsheet), click **Import labels**, navigate to the CSV file that contains the labels you wish to import, select it, and then click **Open**.

Note: The file must be formatted as three columns with no header row. Column 1 should contain numbers from 1 to N (the number of sources), column 2 should contain the source labels, and column 3 should contain the destination labels. Columns are delimited by commas, without spaces. Sample label file:

```
1,VTR 1,OUT 1
2,VTR 2,OUT 2
3,CAM 1,OUT 3
4,CAM 2,OUT 4
5,SAT 1,PGM
6,SAT 2,PVW
```

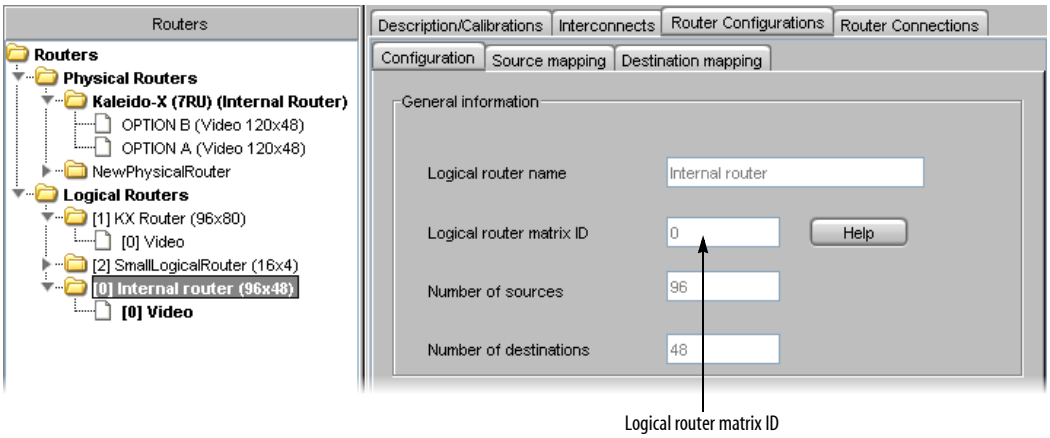
Auto map works as described in *"Step 3 – Adding Logical Routers"* on page 289:


Description/Calibrations
Interconnects
Router Configurations
Router Connections
Configuration
Source mapping
Destination mapping
Size: 48
Auto map
Clear mapping
Import labels...
Auto update labels*
Label [0] Video
1 1 [OPTION A - Output 1] 1
2 2 [OPTION A - Output 2] 2
3 3 [OPTION A - Output 3] 3
4 4 [OPTION A - Output 4] 4
5 5 [OPTION A - Output 5] 5
6 6 [OPTION A - Output 6] 6
7 7 [OPTION A - Output 7] 7
8 8 [OPTION A - Output 8] 8
9 9 [OPTION A - Output 9] 9

It is also useful to have manual control over the source/destination mapping in the event a router card is removed.

Note: The **Auto update labels** feature is not yet supported for internal router cards.

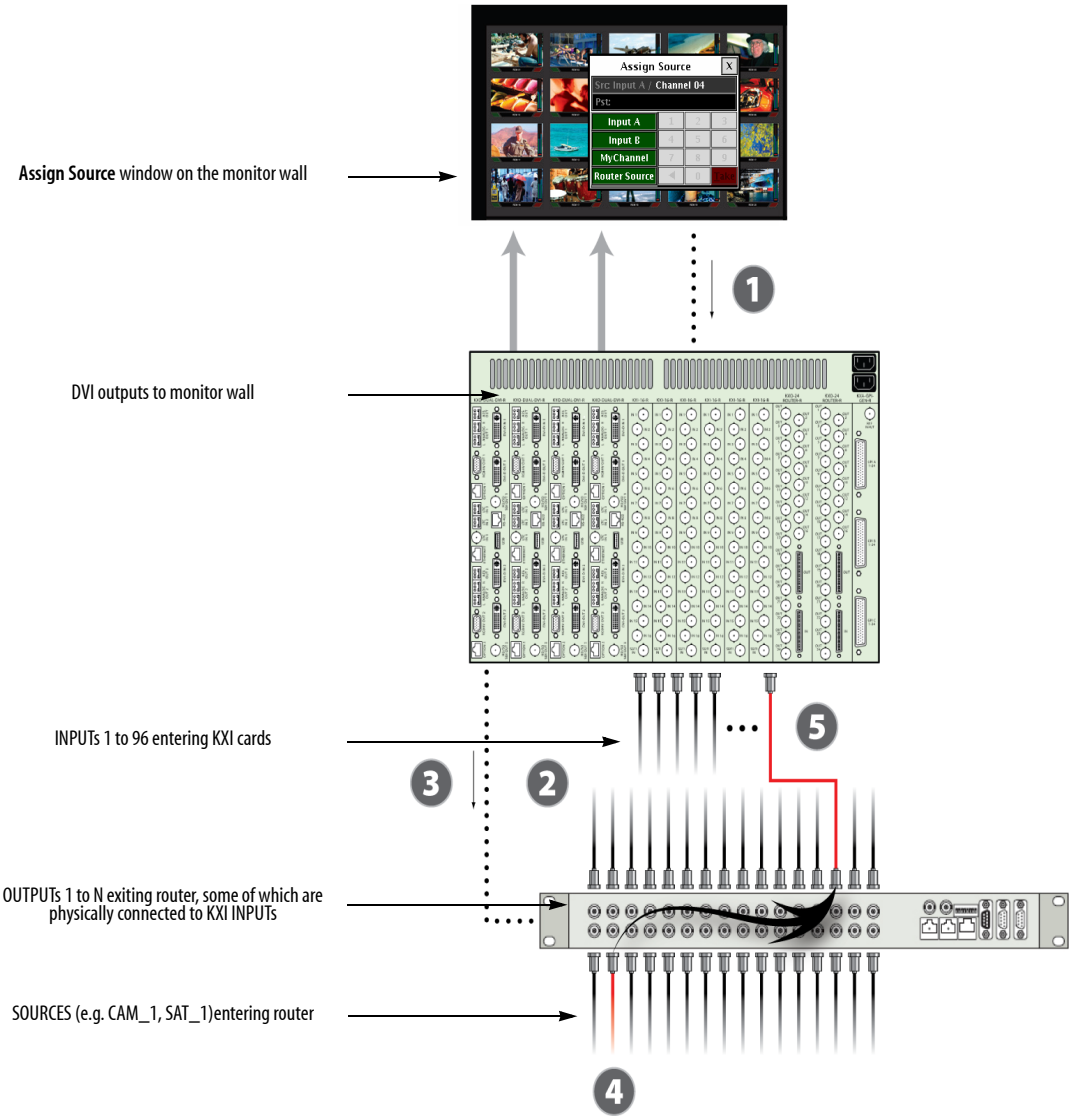
The internal router also has a **Logical router matrix ID**, which can be used by an external router control device or application to control the internal router modules:



Note: In the case of a Kaleido-X (7RU), signals entering the input cards are made available to the internal router cards via the midplane (i.e. there is no cabling between the BNC outputs on the router cards and the BNC inputs on the KXI cards).

Router Connections

To be able to control an upstream router from the monitor wall, you must specify physical connections between a number of multi-viewer inputs and external router outputs that feed them. When you want to assign a source from the upstream router to a video monitor on the monitor wall, the Kaleido-X Software uses this information to allocate a tie line (i.e. one of the multi-viewer's physical input connectors that you reserved for this purpose, and the upstream router's output it is connected to), and initiate the appropriate crosspoint change on the upstream router.



1. An operator right-clicks a monitor and assigns a logical source by using the **Assign Source** window.

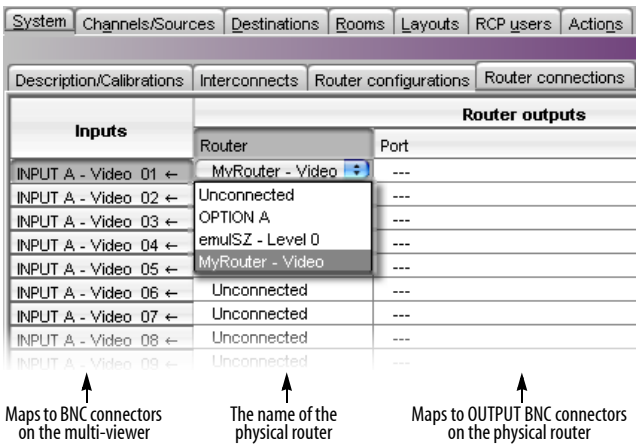
> **Note:** In the case of the Kaleido-X and Kaleido-X16 multi-viewer models, it is also possible to select a source from the **Assign [router] input** menu. However, as of version 5.20 of the Kaleido-X Software, Miranda strongly recommends configuring the *KX Router* logical router to cover all routing purposes within the multi-viewer system.

2. The **Router Connections** tab in XEdit allows you to map physical connections between a number of INPUT connectors on the multi-viewer and the upstream router's OUTPUTs that feed them, which allows the Kaleido-X Software to determine the crosspoint switch needed.
3. The multi-viewer sends this command to the external router, over a serial or TCP/IP connection, using the appropriate protocol.

4. The external router redirects the specified source signal.
5. The new signal follows the physical connection to one of the multi-viewer inputs reserved for this purpose, is processed, and appears on the monitor wall.

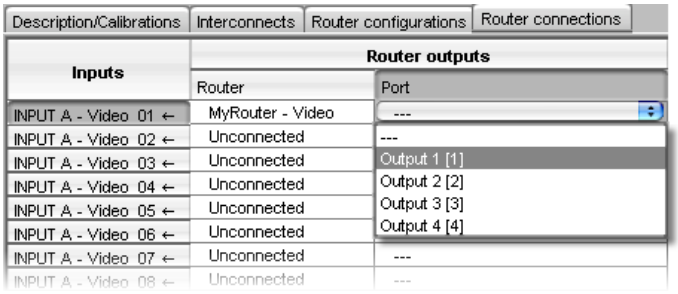
To configure router connections:

1. Click the **Router Connections** tab, which lists all multi-viewer inputs and, for each, the associated output connector from a router. For each multi-viewer input you wish to connect to an external router (e.g. INPUT A – Video 01), click the first menu (under **Router**) and choose a physical router level (e.g. "MyRouter" – Video):



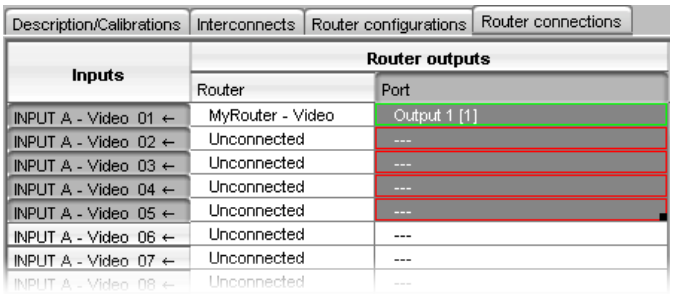
> **Note:** *Unconnected* means that this multi-viewer input is *not connected to a router*. For example, the input might be directly connected to a source signal.

2. Click the second menu and choose the appropriate output (e.g. "Output 1 [1]"):



In this example, the Kaleido-X Software registers that Output 1 from the router has a cable that connects to the BNC connector corresponding to Video 1 on the multi-viewer's INPUT A module. This means that when you select a router source to be assigned to a monitor on the monitor wall, the Kaleido-X software will be able to determine whether the multi-viewer's INPUT A – Video 01 connector is available, and, if so, request the appropriate crosspoint change for "Output 1" of "MyRouter".

3. Use the incremental copy tool to assign the next router outputs to contiguous multi-viewer inputs.



Notes

- Using the incremental copy tool in the **Router** column only copies the selected router to the next rows.
- Using the incremental copy tool in the **Port** column inserts the next output ports from the selected router in sequence, based on their Destination ID, until the last output port has been mapped, at which point using the incremental copy tool further will clear the subsequent cells.
- When using the tool in the **Port** column, the **Router** column is populated accordingly.
- It is possible to select the same output port more than once.

Router Card Expansion

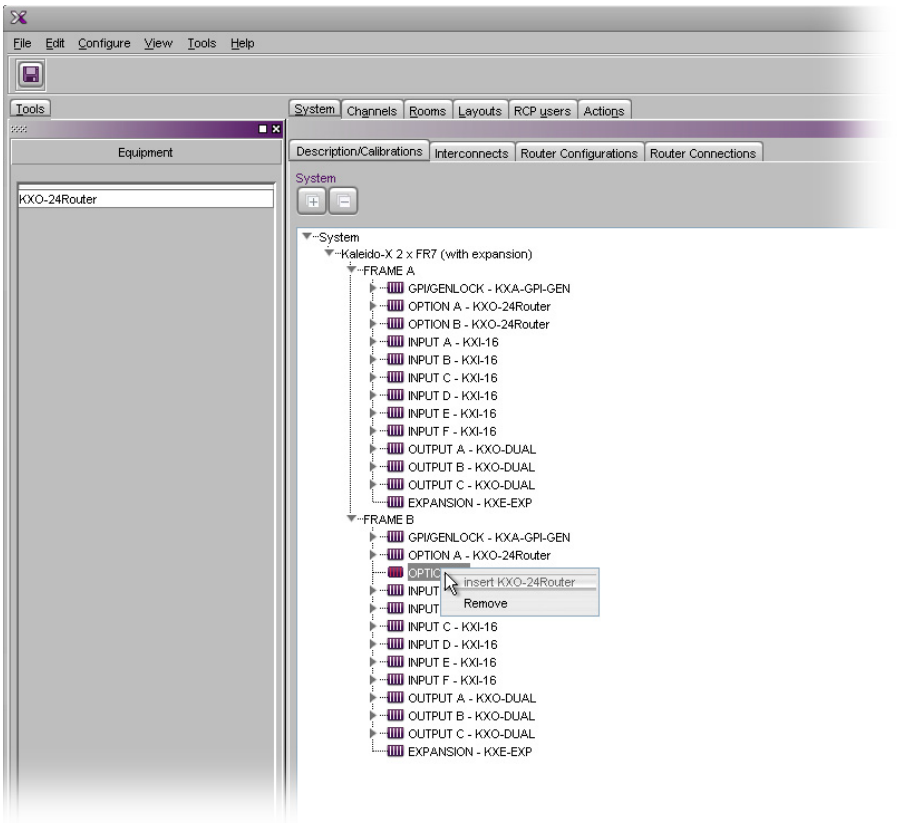
Internal router cards can be connected to each other to create an even larger router. Note that even if you connect two Kaleido-X systems in an expansion configuration, and thereby have access to any source or any input on either frame in your layouts, the same is not true of their respective router cards. You cannot choose a source from one frame and send it to a router output on the other frame.

In order to do this, you must connect the router card(s) of one frame to those of the other using special cables plugged into the expansion ports on the router cards themselves. Then, in XEdit, you must specify how the cards are connected.

Note: Currently, router card expansion can only be applied to Kaleido-X expansion systems.

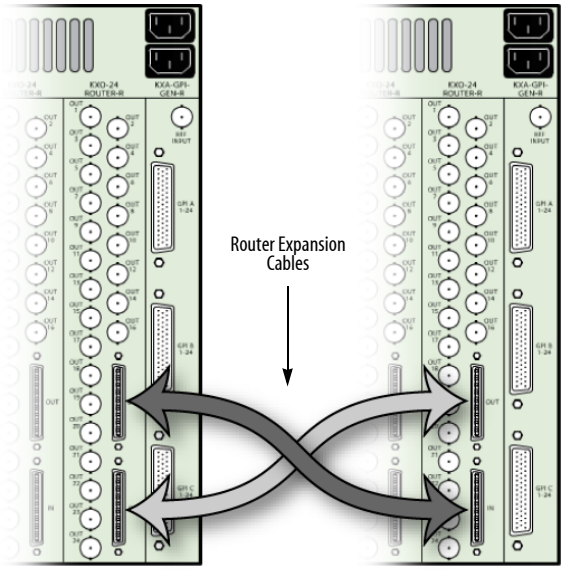
To configure internal router card expansion:

1. Launch XEdit and open the database associated with the Kaleido-X expansion system for which you wish to configure router card expansion.
2. In the System list, add router cards to the OPTION slots in each frame (this procedure describes the case where two cards in one frame are connected to two more in the second frame, but it is also possible to connect only one card per frame):



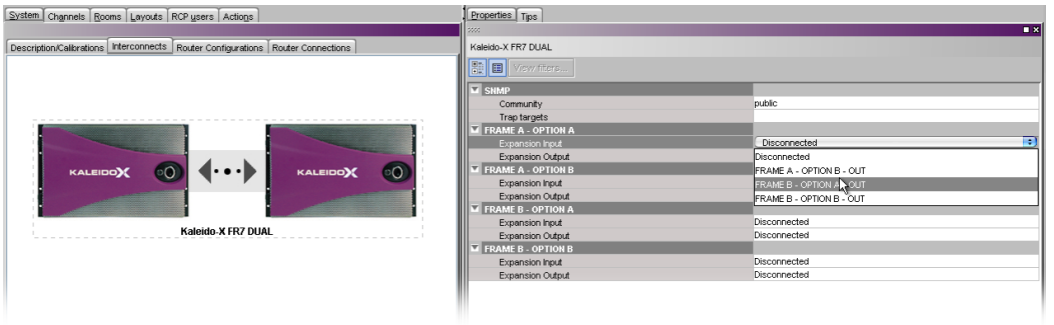
XEdit creates a physical router corresponding to each card, and *two* logical routers (one for each frame), instead of one large logical router. This is because the sources of one Kaleido-X do not enter the router of the other Kaleido-X. The signals do not pass via the frame expansion cable. For this reason, it is not possible to create a large, combined router—since some sources cannot go to some destinations, this would create holes in the router matrix.

To be able to have one big logical router, the router cards must be connected by their own router expansion cables (IN to OUT between cards in the same slot in each frame):

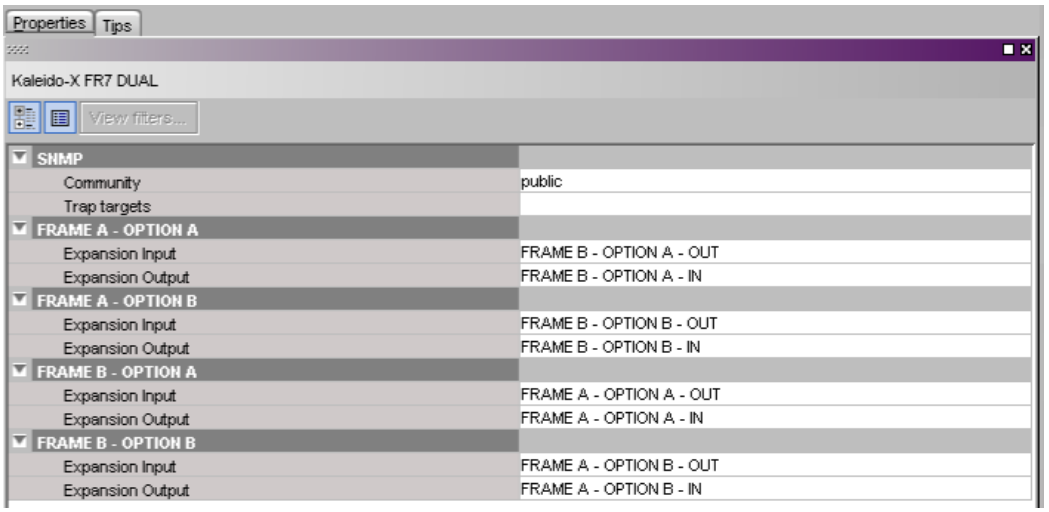


The cabling connections must then be described in XEdit.

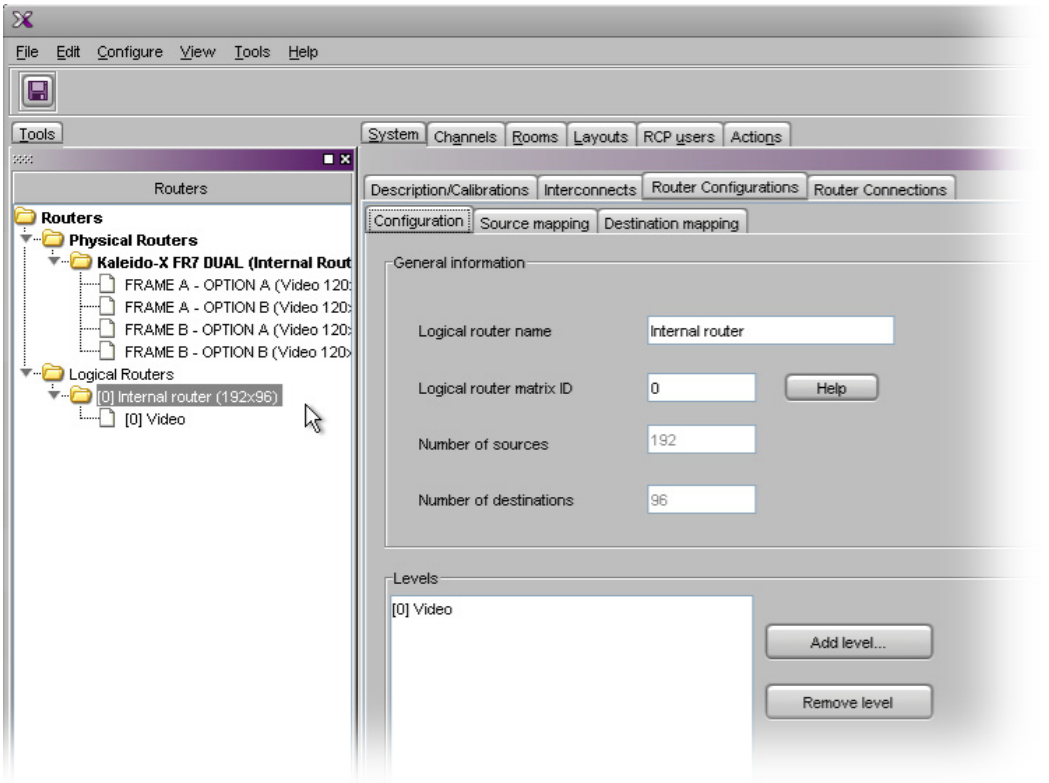
3. Click the **Interconnects** tab, then click the expansion frame icon. Under the **Properties** tab, notice that there are four entries (two per frame) for the router cards (OPTION A and B) with rows labeled **Expansion Input** and **Expansion Output**. Normally, you connect the router cards in matching slots (e.g. FRAME A – OPTION A to FRAME B – OPTION A):



4. For **FRAME A – OPTION A**, click in the white column beside **Expansion Input**, and choose a corresponding output option from the list. A progress window for the router configuration appears briefly. Note that the corresponding (inverse) settings appear beside the card you connected to.
5. Click in the white column beside **Expansion Output**, and choose a corresponding input option from the list.
6. Repeat for **FRAME A – OPTION B**.
7. **OPTION A** and **B** for **FRAME B** are completed automatically:



8. Click the **Router Configurations** tab. Note that the two logical routers have been replaced by one larger logical router (192x96), because now the sources can go anywhere via the router expansion cables:



Source and destination mapping can be performed as described in “Step 3 – Adding Logical Routers” on page 285, and automapping works for all inputs and outputs.

Note: It is not yet possible to use the router expansion cables to connect router cards between standalone Kaleido-X frames. It is possible, however, to only interconnect one router card per frame, leaving another router card per frame standalone. This would have the effect of creating three logical routers.

13 Tally Interface Devices

Miranda's multi-viewer systems support most production switchers and other tally interface devices such as UMD controllers and automation systems, via serial or network connection. The multi-viewer can dynamically update monitor wall elements to reflect text and status updates from the device.

Configuring Kalypso, Andromeda, Serial to TCP/IP Dispatcher and TSL Serial Devices

This instruction set covers the configuration of the Kalypso, Andromeda, Serial to TCP/IP Dispatcher and TSL serial devices, that can be added to a multi-viewer system to receive and interpret serial tally information from peripheral devices. The illustrations, options or properties shown below may vary, depending on your actual system.

To configure a Kalypso, Andromeda, Serial to TCP/IP Dispatcher, or TSL serial device:

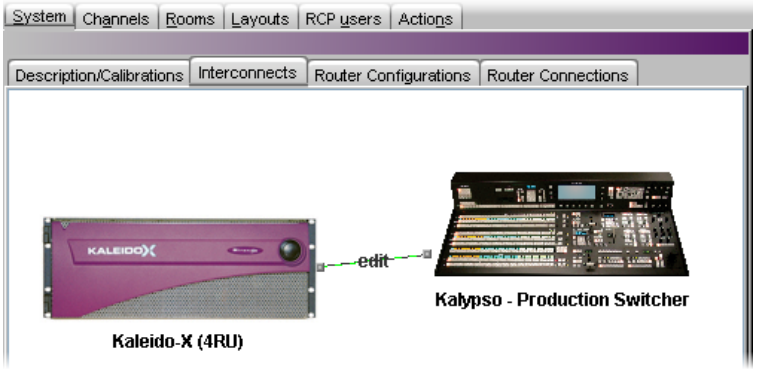
1. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar. The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.
2. Drag the appropriate peripheral device from the equipment library onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click the appropriate peripheral device on the shortcut menu.

   A window appears, prompting you for a device identifier.

Device identifier input window

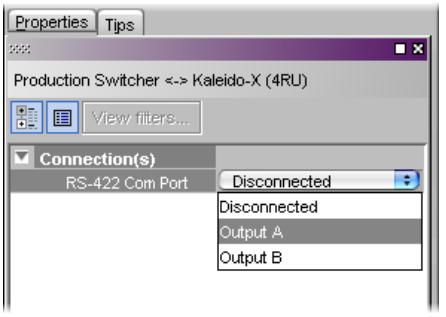
3. Type the name of the peripheral device in the **Enter device identifier** box, and click **OK**.
4. Click the **Interconnects** tab.
5. Click the multi-viewer icon and hold the mouse button, while dragging the pointer towards the peripheral device icon.

   A line representing the connection between the multi-viewer and the device appears.



Connection between the multi-viewer and the device (example using Kalypso, same for all devices)

6. Click the connection line between the multi-viewer and the device.
7. In the **Properties** pane, click the appropriate **Output** in the **RS-422 Com Port** list.



RS-422 Com Port output assignment (example using Kalypso, same for all devices except External Router)

8. Click the peripheral device icon in the **Interconnects** tab.
9. In the **Properties** pane, set the serial communications properties for the device.
10. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.

Ross Video Production Switcher

A multi-viewer can receive dynamic source names and tally information from a Ross Video production switcher (Synergy 2, 3, 4 SD/MD and Vision models). The procedures below describe how to set up the multi-viewer to interface with a Ross Video switcher.

To set up the Ross Video production switcher:

1. Enable the contribution serial tally interface on one of the switcher's ports, by using the switcher's installation menu: from the HOME menu, press **More** > **Setup** > **Installation** > **Comm Setup**, and then configure the serial tally device as follows:

Menu	Field	Value	Sub-value
Type	Com Port	[any REMOTE or PERIPH port (depending on device), or the EDITOR port (on a Synergy 100 panel)]	
	Device	Serial Tally	
SelectDevice	Device	Contrib	
Comm Setting	Baud	38 400-115 200	
	Parity	NONE	
Comm Type	Type	RS-422	
Extra Option	Option	Rate	26
	Option	Data Txfr	Complete
	Option	Start	None
	Option	At Black	All Off

Note: For more information on installing port devices, please refer to your Ross switcher documentation. The communication parameters listed above are recommended values. Other values may also work, but remember that both the switcher and the multi-viewer must be configured with the same values.

2. Physically connect one end of an RJ-45 straight-through cable to the multi-viewer's RS-422 port.

3. Using the *straight* DE-9S-to-RJ-45 adapter (part no. 1737-3000-102), connect the other end of the cable to the enabled serial tally port on the switcher.

> **Note:** Since the protocol is unidirectional, only the transmit pins are required from the switcher's remote port. See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer.

Required pins	Signal
7	TX+
2	TX-

To set up the multi-viewer:

1. Launch XEdit.
2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar. The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.
3. Drag the **Kalypso** device from the equipment library onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click **Insert Kalypso** on the shortcut menu.

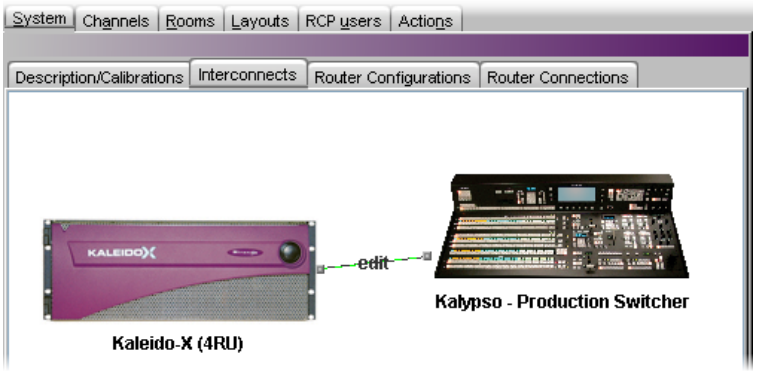
> **Note:** On the multi-viewer, Kalypso is the module that receives and interprets serial tally information from Ross Video production switchers.

A window appears, prompting you for a device identifier.

Device identifier input window

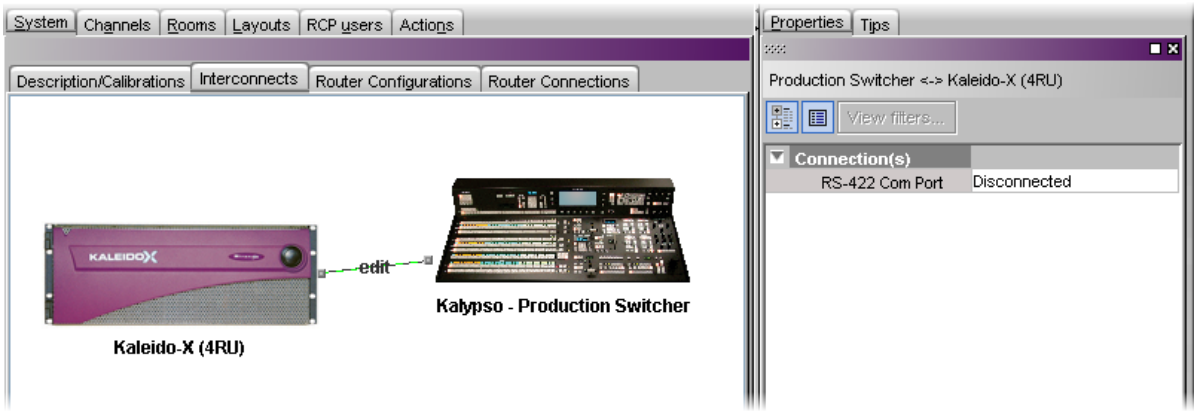
4. Type a name for the Kalypso module in the **Enter device identifier** box, and click **OK**.
5. Click the **Interconnects** tab.
6. Position the pointer over the multi-viewer icon, then click and drag towards the Kalypso device icon.

   A line representing the connection between the multi-viewer and the device appears.

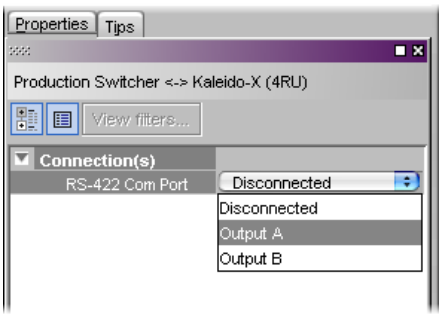


Connection between the multi-viewer and the device

7. Click the connection line between the multi-viewer and the device, and then click the **Properties** tab:

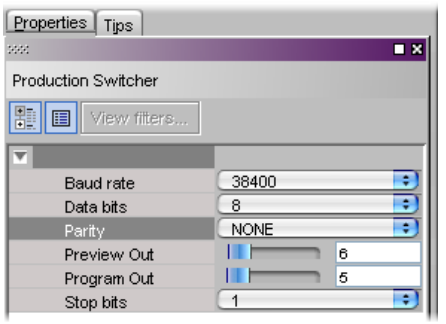


8. In the **Properties** pane, click the appropriate output in the **RS-422 Com Port** list:



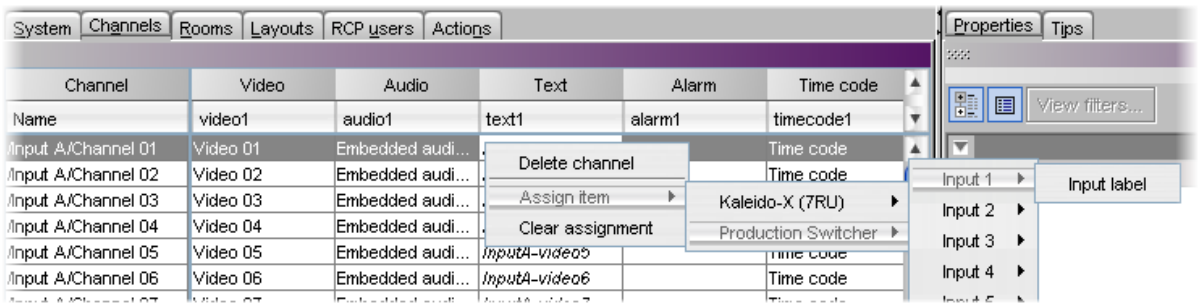
9. In the **Interconnects** tab, click the Kalypso device icon.

10. In the **Properties** pane, set the serial communications properties for the remote port on the Ross Video switcher as follows:



Baud rate	38 400-115 200
Data bits	8
Parity	NONE
Stop bits	1

11. In the **Channels/Sources** tab, create logical sources using text and alarms levels coming from the Kalypso serial tally device:



Note: Refer to the table below for a list of valid source IDs and their meaning in the context of the Kalypso serial tally protocol.

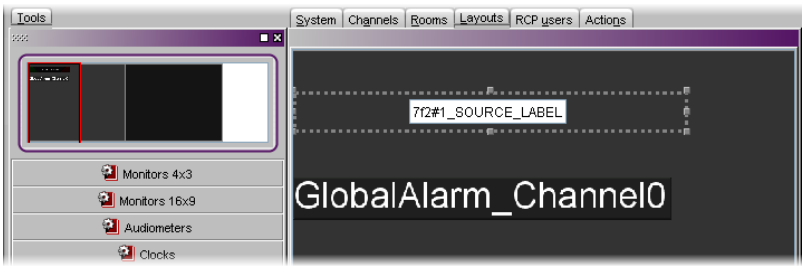
Source IDs	Kalypso
1 - 92	Inputs 1 - 92
93	M/E 1 PGM A
94	M/E 1 PGM B
95	M/E 1 PGM C
96	M/E 1 PGM D
97	M/E 1 PVW A
98	M/E 1 PVW 2
99*	M/E 2 PGM A

Source IDs	Kalypso
100*	M/E 2 PGM B
101*	M/E 2 PGM C
102*	M/E 2 PGM D
103*	M/E 2 PVW A
104*	M/E 2 PVW 2
105*	M/E 3 PGM A
106*	M/E 3 PGM B
107*	M/E 3 PGM C
108*	M/E 3 PGM D
109*	M/E 3 PVW A
110*	M/E 3 PVW 2
111	Pgm-Pst PGM A
112	Pgm-Pst PGM B
113	Pgm-Pst PGM C
114	Pgm-Pst PGM D
115	Pgm-Pst PVW A
116	Pgm-Pst PVW 2
117	Test Signal
118	Black
119	Background 1
120	Background 2
121	Still Store 1
122	Still Store 2
123	Still Store 3
124	Still Store 4

Source IDs	Kalypso
125	Still Store 5
126	Still Store 6
127	Still Store 7
128	Still Store 8

* 2-M/E systems do not have these sources.

12. In the **Layouts** tab, create layouts and assign logical sources created in step 11 to monitors that can display text (e.g. UMD) and alarms (e.g. UMD, video, text alarm).



13. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.
14. On the **Configure** menu, point to **Database**, and then click **Export** to export the database to your multi-viewer.
15. On the multi-viewer, load the layout containing the monitors assigned to dynamic text and tallies coming from the Ross Video switcher.

    You should see source names and tallies from the Ross Video switcher on the monitor wall.

Sony Production Switcher

A multi-viewer can receive dynamic source names and tally information from a Sony switcher. The procedure below describes how to set up a multi-viewer to interface with a Sony production switcher (DVS-9000 series, MVS-8000 series or MFS-2000 series).

Setting Up a Sony Switcher

To set up a Sony switcher:

1. Enable *serial tally* on one of the switcher's ports (refer to the Sony Production Switcher System User's Guide for details).[1]

Note: There are no serial tally connections on the Sony switcher model DVS-9000. See "DVS-9000 Switchers" on page 319 for details.

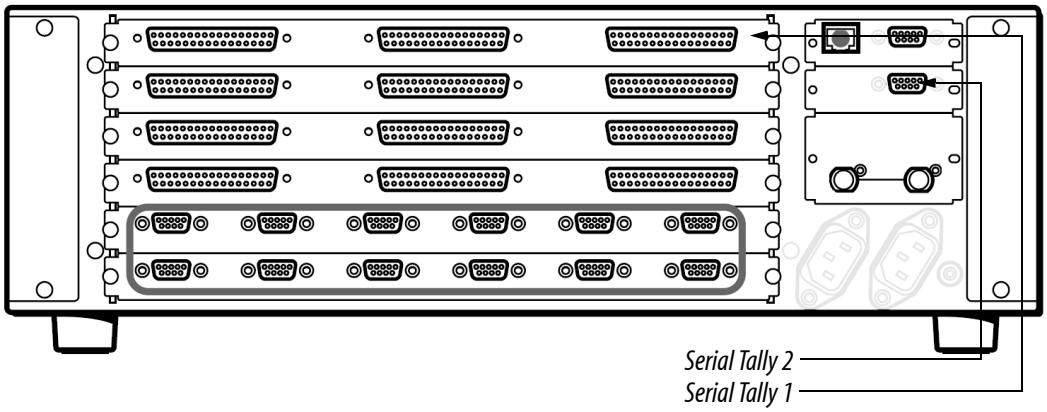
2. Physically connect one end of an RJ-45 crossover cable to the multi-viewer's RS-422 port.
3. Using an DE-9S-to-RJ-45 converter, connect the other end of the crossover cable to the enabled serial tally port on the Sony switcher. See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer.

DVS-9000 Switchers

Since there are no serial tally connections on the DVS-9000 switcher, you will need an additional device—either a Device Control Unit (DCU) or a System Control Unit (SCU)—between this switcher model and the multi-viewer. Use a DCU model MKS-8700 or DCU-8000, or an SCU model MKS-8010A or MKS-8010B.

Note: MKS-2700: The 1 RU DCU model MKS-2700 does not have a serial tally connection, so serial tally must come from a MKS-8010A or MKS-8010B SCU.

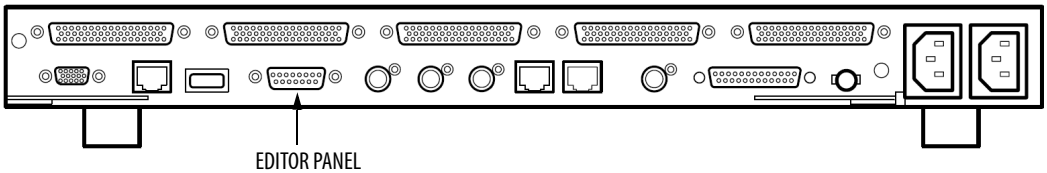
- On a DCU (MKS-8700 or DCU-8000), use the connectors labeled *Serial Tally 1* and *Serial Tally 2*.



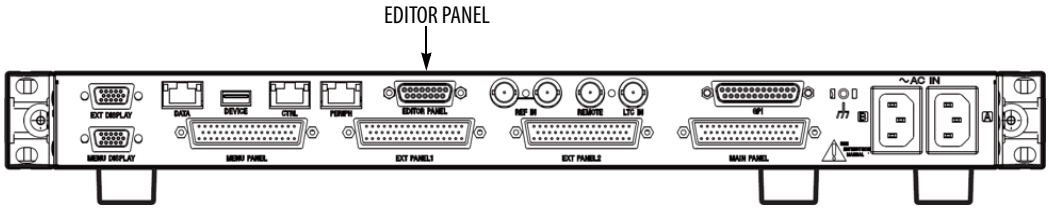
Sony Device Control Unit Pack (DCU-8000)

- On an SCU (MKS-8010A or MKS-8010B), use the 15-pin connector labeled *EDITOR PANEL*, with an adapter.

1. The User's Manuals for the DVS-9000, for example, are available here:
http://bssc.sel.sony.com/BroadcastandBusiness/docs/manuals/dvs9000ccp8000_ug_1er11e.pdf
http://bssc.sel.sony.com/BroadcastandBusiness/docs/manuals/dvs9000ccp8000_ug_1er12e.pdf



Sony System Control Unit (MKS-8010A)



Sony System Control Unit (MKS-8010B)

To use a serial tally from an SCU model MKS-8010A or MKS-8010B, a 15-pin-to-9-pin adapter is required, with pinouts as follows:

MKS-8010A or MKS-8010B (15-pin)	SCU (Signal)	Serial tally device (9-pin)
2	RX-	2
3	TX+	3
10	RX+	7
11	TX-	8
4	GND	4

No adapter is required for SCU model MKS-8010, which has a DE-9 connector with the following pinouts:

MKS-8010 (9-pin)	SCU (Signal)
2	RX-
3	TX+
7	RX+
8	TX-
4	GND

In addition, on Sony menu page 7367, you must enable R and G serial tallies on the SCU port.

Note: See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer.

Setting Up a Multi-Viewer to Interface with a Sony Production Switcher

To set up the multi-viewer to interface with the Sony production switcher:

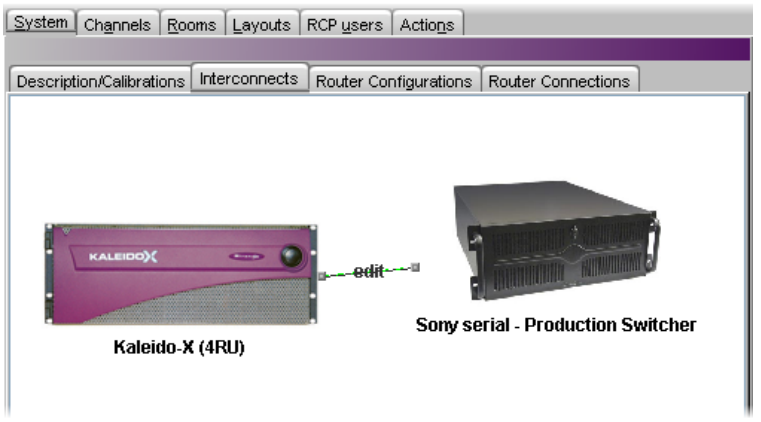
1. Launch XEdit.
2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar. The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.
3. Drag the **Sony** production switcher device from the equipment library onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click **Insert Sony serial tally** on the shortcut menu.

   A window appears, prompting you for a device identifier:

Device identifier input window

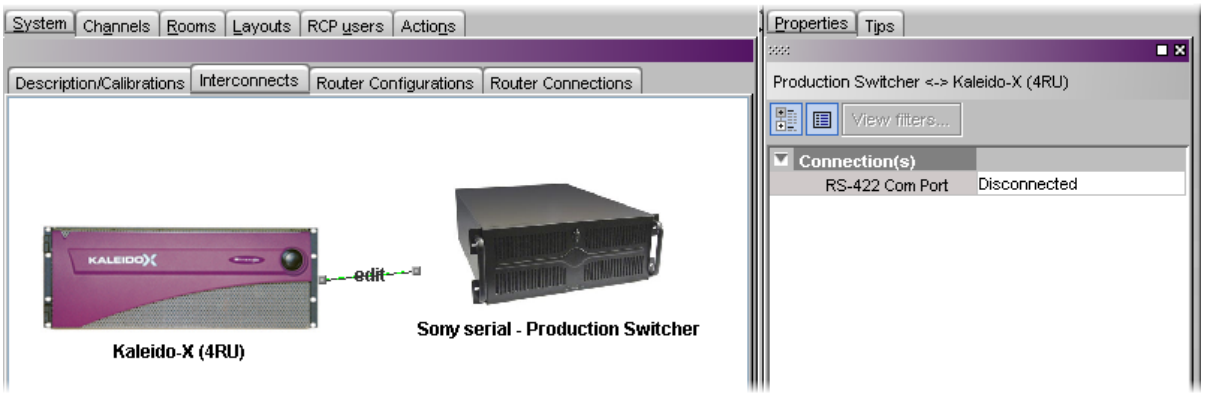
4. Type the name of the Sony production switcher in the **Enter device identifier** box, and then click **OK**.
5. Click the **Interconnects** tab.
6. Position the pointer over the multi-viewer icon, then click and drag towards the Sony production switcher icon.

   A line representing the connection between the multi-viewer and the device appears.

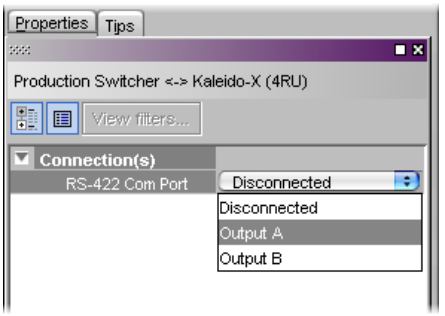


Connection between the multi-viewer and the device

7. Click the connection line between the multi-viewer and the device, and then click the **Properties** tab:

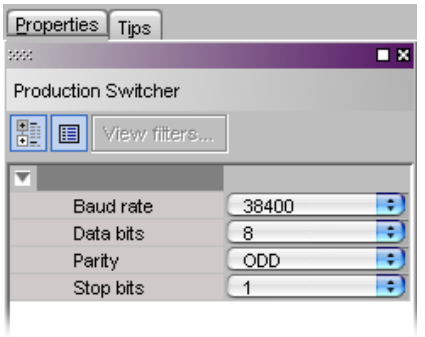


8. In the **Properties** pane, click the appropriate output in the **RS-422 Com Port** list:

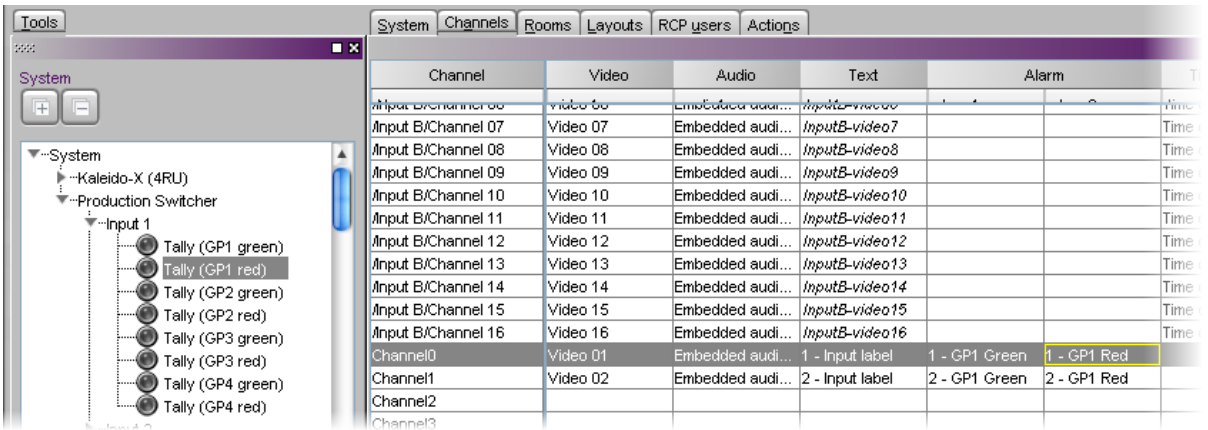


9. In the **Interconnects** tab, click the **Sony** production switcher icon.
10. In the **Properties** pane, set the serial communications properties for the Sony device as follows:

Baud Rate	38 400
Data Bits	8
Parity	ODD
Stop bits	1



11. In the **Channels/Sources** tab, create logical sources using text and alarms levels coming from the Sony serial tally device:



12. In the **Layouts** tab, create layouts and assign logical sources created in step 11 to monitors that can display text (e.g. UMD) and alarms (e.g. UMD, video, text alarm):

13. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.
14. On the **Configure** menu, point to **Database**, and then click **Export** to export the database to your multi-viewer.
15. On the multi-viewer, load the layout containing the monitors assigned to dynamic text and tallies coming from the Sony switcher.

    You should see source names and tallies from the Sony switcher on the monitor wall.

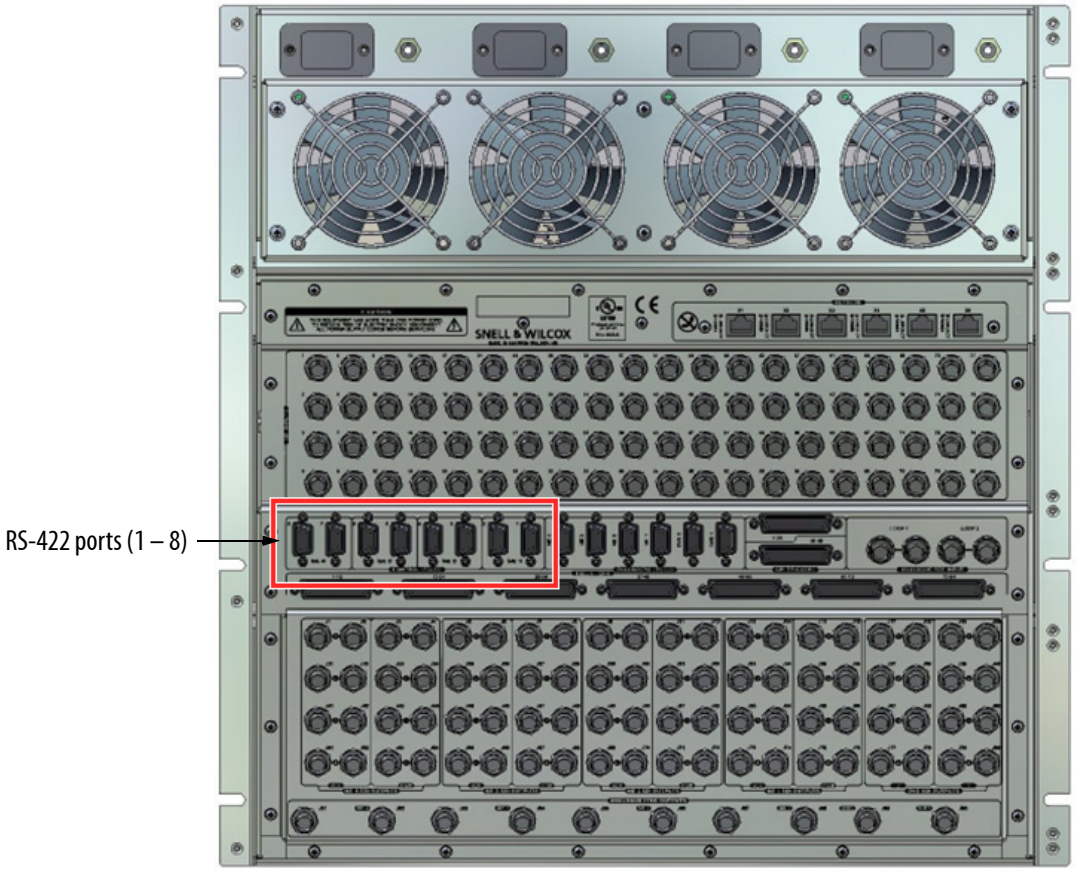
Kahuna Production Switcher

A multi-viewer can receive dynamic source names and tally information from a Kahuna production switcher. The procedures below describe how to set up a multi-viewer to interface with a Kahuna switcher.

To set up the Kahuna switcher:

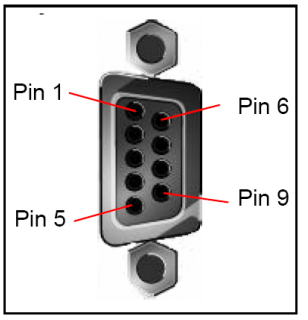
1. Physically connect one end of an RJ-45 crossover cable to the multi-viewer's RS-422 port.
2. Using an DE-9S-to-RJ-45 converter, connect the other end of the crossover cable to the appropriate RS-422 control port on the Kahuna switcher. See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer. The illustration below shows the location of the RS-422 ports on an 11RU Kahuna

switcher. The RS-422 ports (highlighted) are numbered 1 – 8, from right to left. Refer to the *Kahuna Install Manual* for more details on the RS-422 control ports.[1]



The Kahuna has DE-9 connectors with the following pinouts:

9-pin	Signal
2	RX-
3	TX+
7	RX+
8	TX-
4	GND



Note: See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer.

1. The Kahuna Install Manual is available here: https://kahuna.snellgroup.com/kahunaclub/kahunacare/documents.php

3. On the Kahuna switcher's GUI panel, press the **ENG CONFIG** button.

   The **Engineering Config** menu appears on the touch screen.
4. Touch the **Protocols** button on the screen to bring up the **Engineering Config – Serial Port Protocols** menu.
5. In the list of RS-422 ports, select the one to which you connected the crossover cable.
6. Set the communications parameters for the selected port as follows, using the rotary controls on the right of the GUI panel:

Protocol	**Serial Tally**
Baud Rate	115 200
Parity	NONE
Data Bits	8
Stop bits	1
Port Type	Master

7. On the Kahuna switcher's GUI panel, press the **PERIPH** button

   The **Peripherals** menu appears.
8. Touch the **Tally Control** button on the screen to bring up the **Peripherals – Tally Protocol** menu.
9. Select the RS-422 port that is connected to the multi-viewer, and set its serial protocol options as follows:

Extension Enable	On
Full Table Enable	On

Notes

- Refer to the *Kahuna User Instruction Manual* for further details on setting up the port protocols and tally protocol parameters (see `https://kahuna.snellgroup.com/kahunaclub/kahunacare/documents.php`).
- Although it is possible to define "user configuration" source names on the Kahuna switcher, these are not transmitted over the serial tally interface. The switcher only transmits the "engineering configuration" source names.

To set up the multi-viewer:

1. Launch XEdit.

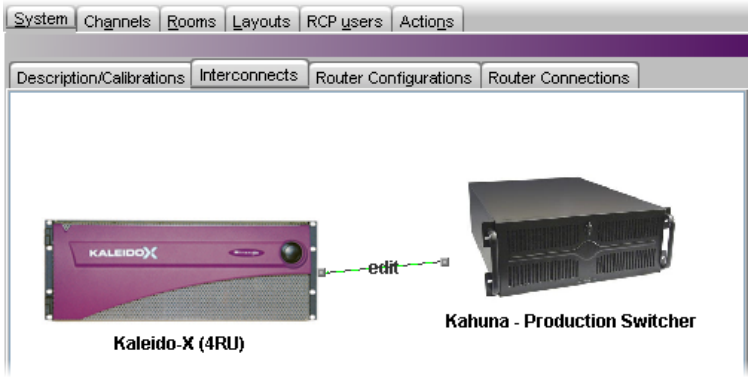
2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar. The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.
3. Drag the **Kahuna** production switcher device from the equipment library onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click **Insert Kahuna** on the shortcut menu.

   A window appears, prompting you for a device identifier.

Device identifier input window

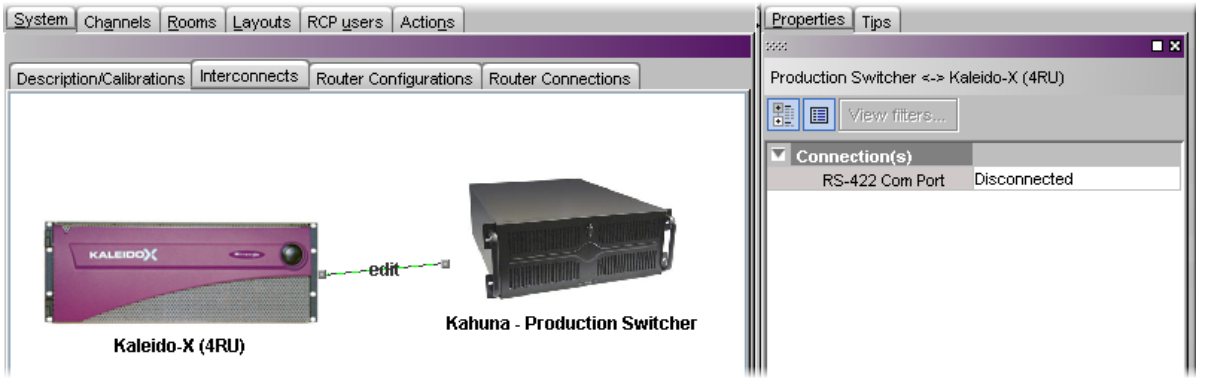
4. Type a name for the Kahuna production switcher in the **Enter device identifier** box, and then click **OK**.
5. Click the **Interconnects** tab.
6. Position the pointer over the multi-viewer icon, then click and drag towards the Kahuna production switcher icon.

   A line representing the connection between the multi-viewer and the device appears.

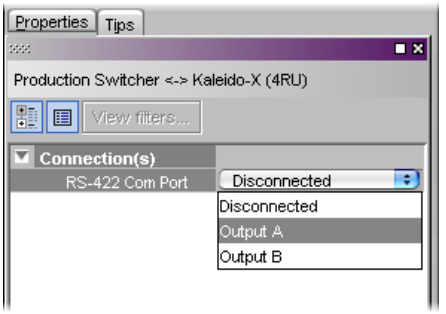


Connection between the multi-viewer and the device

7. Click the connection line between multi-viewer and device, and then click the **Properties** tab:

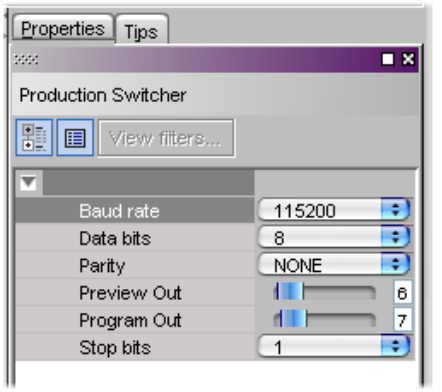


8. In the **Properties** pane, click the appropriate output in the **RS-422 Com Port** list.



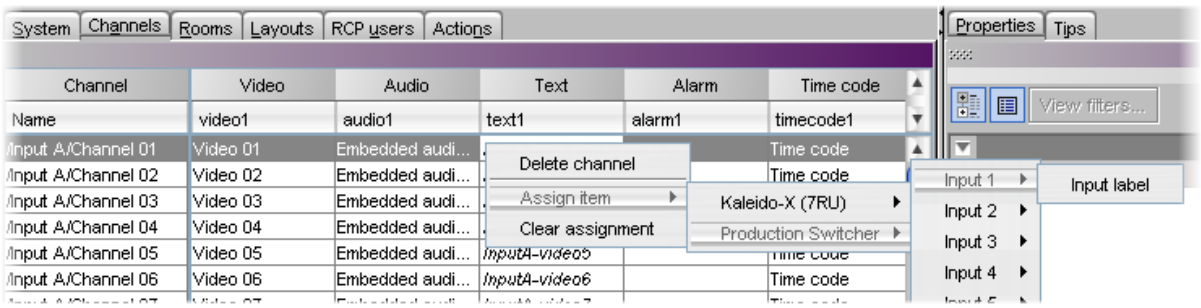
9. In the **Interconnects** tab, click the **Kahuna** production switcher icon.

10. In the **Properties** pane, set the serial communications properties for the Kahuna device as follows:



Baud Rate	115200
Data Bits	8
Parity	NONE
Stop bits	1

11. In the **Channels/Sources** tab, create logical sources using Text and Alarm elements coming from the Kahuna's serial tally information.



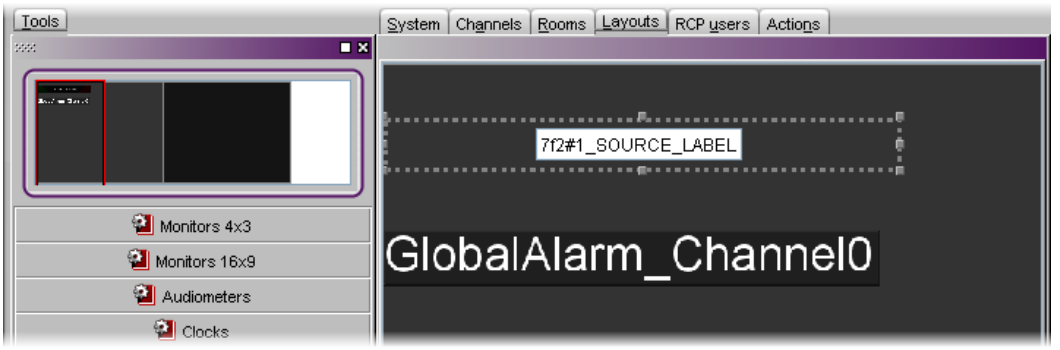
Note: Refer to the table below for a list of valid source IDs and their meaning in the context of the Kahuna serial tally protocol.

Source IDs	Kahuna
1 - 80	Inputs 1 - 80
81	Store 9
82	Store 10
83	Store 11
84	Store 12
85	Store 13
86	Store 14
87	Store 15
88	Store 16
89	DVE 1 Output 1
90	DVE 1 Output 2
91	DVE 1 Output 3
92	DVE 1 Output 4
93	M/E 1 Output 1
94	M/E 1 Output 2
95	M/E 1 Output 3
96	M/E 1 Output 4

Source IDs	Kahuna
97	Unused
98	Unused
99	M/E 2 Output 1
100	M/E 2 Output 2
101	M/E 2 Output 3
102	M/E 2 Output 4
103	Unused
104	Unused
105	M/E 3 Output 1
106	M/E 3 Output 2
107	M/E 3 Output 3
108	M/E 3 Output 4
109	Unused
110	Unused
111	Pgm-Pst Output 1
112	Pgm-Pst Output 2
113	Pgm-Pst Output 3
114	Pgm-Pst Output 4
115	Unused
116	Unused
117	DVE 2 Output 1
118	DVE 2 Output 2
119	DVE 2 Output 3
120	DVE 2 Output 4
121	Store 1

Source IDs	Kahuna
122	Store 2
123	Store 3
124	Store 4
125	Store 5
126	Store 6
127	Store 7
128	Store 8

12. In the **Layouts** tab, create layouts and assign logical sources created in step 11 to monitors that can display text (e.g. UMD) and alarms (e.g. UMD, video, text alarm):



13. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.
14. On the **Configure** menu, point to **Database**, and then click **Export** to export the database to your multi-viewer.
15. On the multi-viewer, load the layout containing the monitors assigned to dynamic text and tallies coming from the Kahuna switcher.

    You should see source names and tallies from the Kahuna switcher on the monitor wall.

Kayak Production Switcher

A multi-viewer can receive dynamic source names and tally information from Thomson Grass Valley production switchers that support the ACOS protocol, including the KayakDD, Kayak HD/SD, DD35, and XtenDD HD/SD series. The procedures below describe how to set up a multi-viewer to interface with these Thomson Grass Valley switchers, for which the generic name *Kayak switcher* will be used.

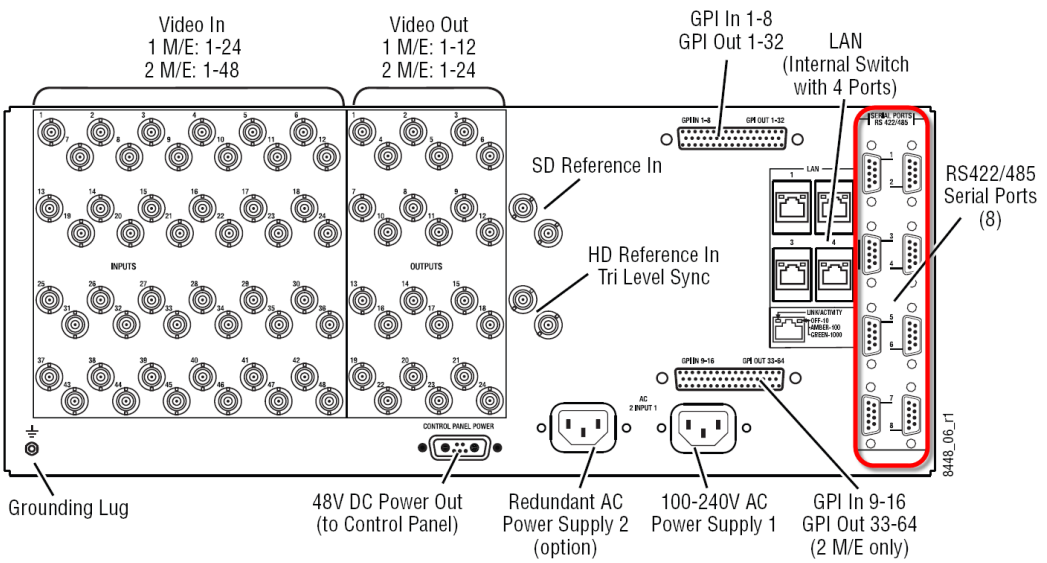
Note: The on-air tally feature was introduced in version 6.9.3 of the ACOS protocol, which is only available with the Kayak series of Thomson Grass Valley production switchers. Other features such as retrieving dynamic source or destination names, and changing crosspoints are available on all ACOS-enabled production switchers.

Configuring the Kayak Switcher

Once you have established a serial connection between the switcher and your multi-viewer, you will need to enable the ACOS protocol on the switcher's serial port by using the Sidepanel software.

To set up the Kayak switcher:

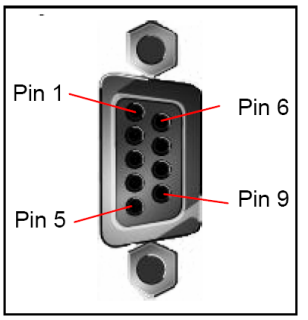
1. Physically connect one end of an RJ-45 crossover cable to the multi-viewer's RS-422 port.
2. Using an DE-9S-to-RJ-45 converter, connect the other end of the crossover cable to one of the RS-422 control ports on the Kayak switcher. The illustration below shows the location of the RS-422 ports on an 4RU Kayak HD switcher. The RS-422 ports (highlighted) are numbered 1 – 8, from top to bottom. Refer to your switcher's *Installation and Service Manual* for more details.[1]



1. Manuals and Release Notes for the Thomson Grass Valley production switchers are available here: http://www.grassvalley.com/docs/all_switchers.html#manuals

The Kayak switcher's 8 control ports have DE-9 female connectors with the following pinouts:

Pin	Signal
1 and 9	Chassis Ground
2	RX-
3	TX+
7	RX+
8	TX-
4 and 6	Signal Ground



Note: See "RS-422 Connection Diagram" on page 28 for pinouts on the multi-viewer.

3. Install the Sidepanel software (available on the Kayak Software CD) on a PC or laptop, if you have not already done so. (Refer to your switcher's Release Notes for installation instructions.)
4. Launch the Sidepanel software, and navigate to the **Install** > **E-Box** menu.
5. Click the **Router** tab.
6. Under **Automation Control 1**, select the appropriate serial port (i.e. the one to which the multi-viewer is connected) and the protocol type (only "acos_vxxx" should be available).

   This completes the configuration required on the switcher. The ACOS protocol is now enabled on the serial port used for the connection between the switcher and the multi-viewer. The multi-viewer system will be able to send commands to the switcher, and the switcher will respond accordingly.

Configuring the Multi-Viewer

For your multi-viewer to receive tally status, input names and output names from a Kayak switcher, and to display the switcher's contribution on the monitor wall as visual tally and dynamic text information, you need to configure your multi-viewer's Kayak serial tally service, by performing the following tasks in XEdit:

- set up the communication parameters for the serial connection;
- configure logical sources by assigning input names, output names, and tally status from the switcher to the logical sources' text or alarm levels;
- assign alarm and text levels from logical sources to layout elements such as UMDs or alarm monitors.

Establishing Serial Communication on the Multi-Viewer

To set up the multi-viewer's communication parameters:

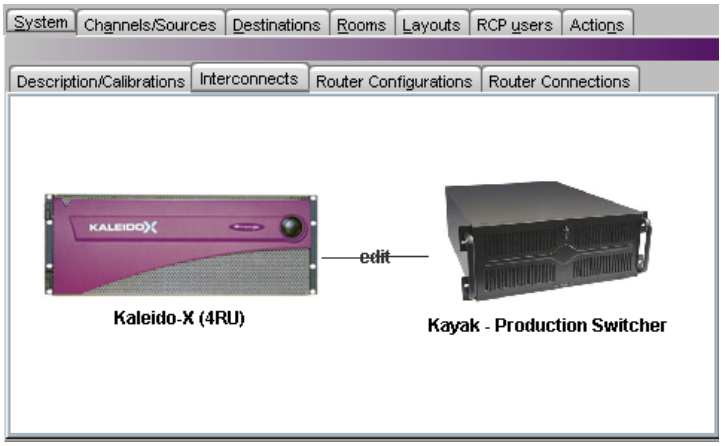
1. Launch XEdit.
2. In the main window, click the **System** tab, and then click **Description/Calibrations** on the second-level tab bar. The main pane displays the System hierarchical list, and the **Tools** pane displays the equipment library when the root of the System list is selected.
3. Drag the **Kayak** production switcher device from the equipment library onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click **Insert Kayak** on the shortcut menu.

   A window appears, prompting you for a device identifier:

Device identifier input window

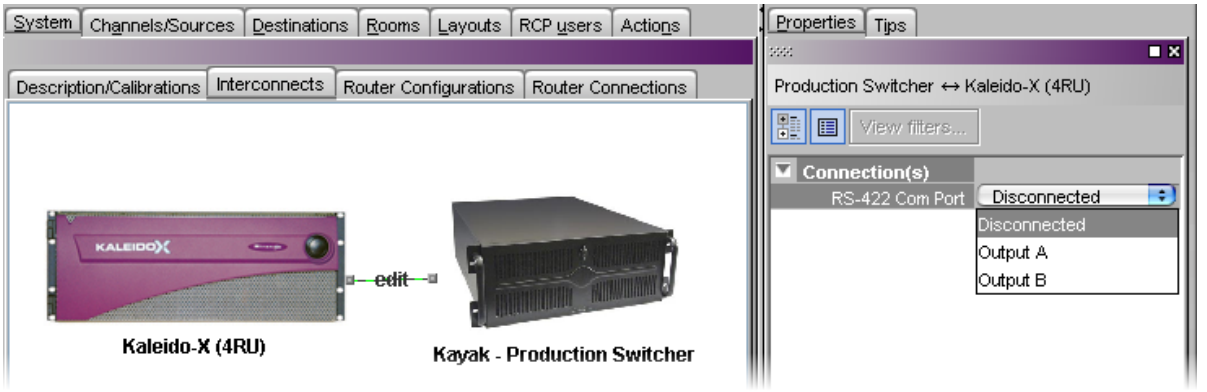
4. Type a name for the Kayak production switcher in the **Enter device identifier** box, and click **OK**.
5. Click the **Interconnects** tab.
6. Position the pointer over the multi-viewer icon, then click and drag towards the Kayak production switcher icon.

   A line representing the connection between the multi-viewer and the device appears:



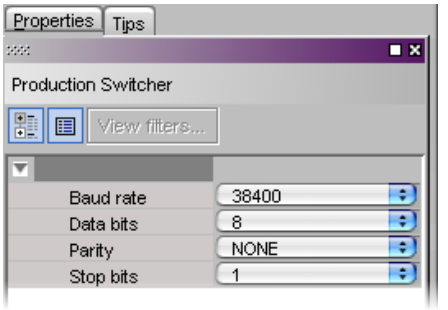
Connection between the multi-viewer and the device

7. Click the connection line between multi-viewer and device, and then click the **Properties** tab.
8. In the **Properties** pane, click the appropriate output in the **RS-422 Com Port** list:



9. In the **Interconnects** tab, click the **Kayak** production switcher icon.
10. In the **Properties** pane, set the serial communications properties for the Kayak device as follows:

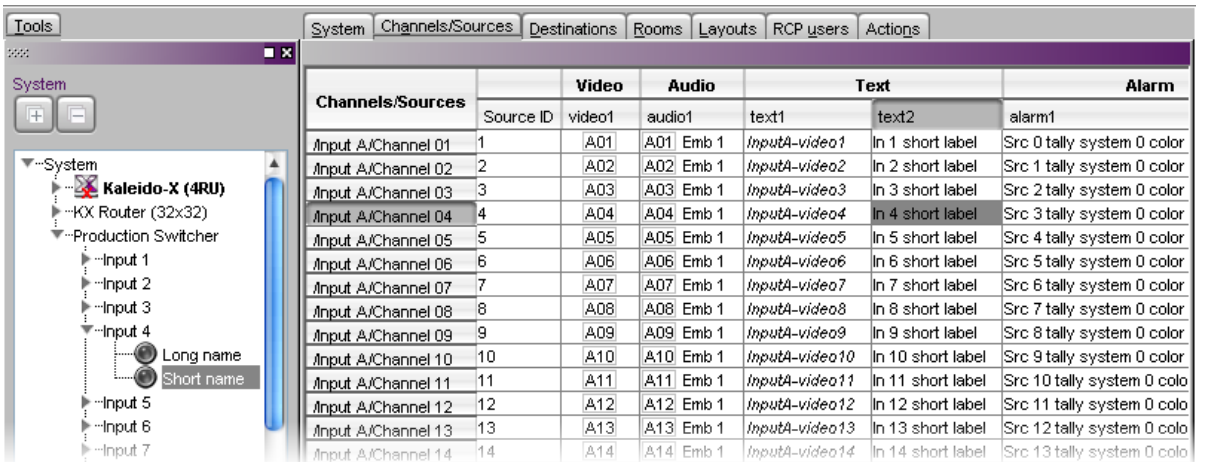
Baud Rate	38400
Data Bits	8
Parity	NONE
Stop bits	1



Assigning Tallies, Input Names, and Output Names to Logical Sources

To configure your logical sources:

- In the **Channels/Sources** tab, configure logical sources using text sources and system tallies from the Kayak's serial interface:



Channels/Sources		Video	Audio	Text		Alarm
	Source ID	video1	audio1	text1	text2	alarm1
Input A/Channel 01	1	A01	A01 Emb 1	*InputA-video1*	In 1 short label	Src 0 tally system 0 color
Input A/Channel 02	2	A02	A02 Emb 1	*InputA-video2*	In 2 short label	Src 1 tally system 0 color
Input A/Channel 03	3	A03	A03 Emb 1	*InputA-video3*	In 3 short label	Src 2 tally system 0 color
Input A/Channel 04	4	A04	A04 Emb 1	*InputA-video4*	In 4 short label	Src 3 tally system 0 color
Input A/Channel 05	5	A05	A05 Emb 1	*InputA-video5*	In 5 short label	Src 4 tally system 0 color
Input A/Channel 06	6	A06	A06 Emb 1	*InputA-video6*	In 6 short label	Src 5 tally system 0 color
Input A/Channel 07	7	A07	A07 Emb 1	*InputA-video7*	In 7 short label	Src 6 tally system 0 color
Input A/Channel 08	8	A08	A08 Emb 1	*InputA-video8*	In 8 short label	Src 7 tally system 0 color
Input A/Channel 09	9	A09	A09 Emb 1	*InputA-video9*	In 9 short label	Src 8 tally system 0 color
Input A/Channel 10	10	A10	A10 Emb 1	*InputA-video10*	In 10 short label	Src 9 tally system 0 color
Input A/Channel 11	11	A11	A11 Emb 1	*InputA-video11*	In 11 short label	Src 10 tally system 0 colo
Input A/Channel 12	12	A12	A12 Emb 1	*InputA-video12*	In 12 short label	Src 11 tally system 0 colo
Input A/Channel 13	13	A13	A13 Emb 1	*InputA-video13*	In 13 short label	Src 12 tally system 0 colo
Input A/Channel 14	14	A14	A14 Emb 1	*InputA-video14*	In 14 short label	Src 13 tally system 0 colo

Notes

- Kayak devices provide up to 512 text sources, and up to 256 × 5 system tally sources.
- The current version of the XtenDD HD/SD switchers software does not provide tally sources.
- DD35 and the Kayak series switchers only provide RED (On Air) tally sources. This is a limitation in the current version (6.9.3) of the ACOS protocol.
- Refer to the table below for a list of valid sources, depending on your switcher model, and their meaning in the context of the ACOS protocol.

Input Number	DD35	XtenDD HD	XtenDD SD	KayakDD	Kayak SD/HD
0x00	BLACK	BLACK	BLACK	BLACK	BLACK
0x01..0x60	Input1...62 (0x01..0x3E)	Input 1..90 (0x01..0x5A)	Input 1..90 (0x01..0x5A)	Input 1..32 (0x01..0x20)	Input 1..96(0x01..0x60)
0x80	VideoStore				
0x81	Montage processor 1				
0x82	Montage processor 2				
0x85	DVX1	DVX1	DVX1		
0x86	DVX2	DVX2	DVX2		
0x87	DVX3	DVX3	DVX3		
0x88	DVX4	DVX4	DVX4		
0x89		RamRec1	RamRec1	RamRec1	RamRec1
0x8A		RamRec2	RamRec2	RamRec2	RamRec2
0x8B		RamRec3	RamRec3	RamRec3	RamRec3
0x8C		RamRec4	RamRec4	RamRec4	RamRec4
0x8D					RamRec5
0x8E					RamRec6
0x90	ColorBGD1	ColorBGD1	ColorBGD1	ColorBGD1	ColorBGD1
0x91	ColorBGD2	ColorBGD2		ColorBGD2	ColorBGD2
0x92	ColorBGD3			ColorBGD3	ColorBGD3

Input Number	DD35	XtenDD HD	XtenDD SD	KayakDD	Kayak SD/HD
0x98			ColorBGD ME		
0x99					ColorBGDTest
0xA0	PP-Main	PP-Main	PP-Main	PP A	PP A
0xA1	ME1-Main	ME1-Main	ME1-Main	M1 A	M1 A
0xA2	ME2-Main	ME2-Main	ME2-Main		M2 A
0xA3	ME3-Main	ME3-Main	ME3-Main		M3 A
0xA4					MEhA
0xA8			PP_UTIL_D		
0xA9			PP_UTIL_E		
0xAA			ME1_UTIL_D		
0xAB			ME1_UTIL_E		
0xAC			ME2_UTIL_D		
0xAD			ME2_UTIL_E		
0xAE			ME3_UTIL_D		
0xAF			ME3_UTIL_E		
0xB0	PP-PVW	PP-PVW	PP-PVW	PPp1	PPp1
0xB1	ME1-PVW	ME1-PVW	ME1-PVW	M1p1	M1p1
0xB2	ME2-PVW	ME2-PVW	ME2-PVW	M2p1	M2p1
0xB3	ME3-PVW	ME3-PVW	ME3-PVW	M3p1	M3p1
0xB4					Mhp1
0xB8		VideoStore1	VideoStore1		
0xB9		VideoStore2	VideoStore2		
0xBA		VideoStore3	VideoStore3		
0xBB		VideoStore4	VideoStore4		
0xBC		VideoStore5	VideoStore5		
0xBD		VideoStore6	VideoStore6		

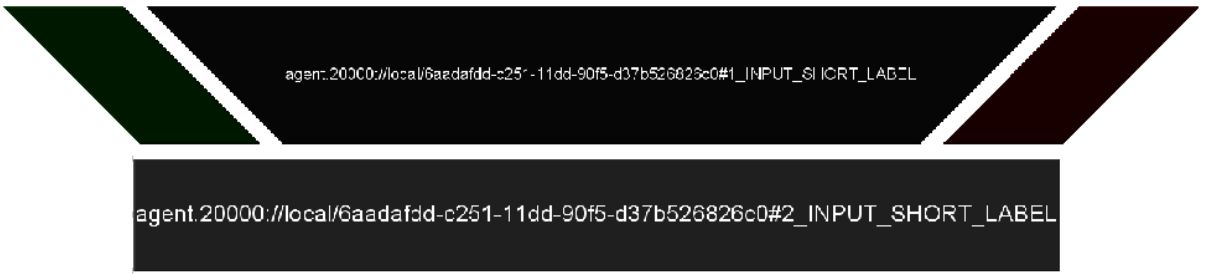
Input Number	DD35	XtenDD HD	XtenDD SD	KayakDD	Kayak SD/HD
0xC0					PP C
0xC1	Layer ME1				PP D
0xC2	Layer ME2				M1 C
0xC3	Layer ME3				M1 D
0xC4					M2 C
0xC5					M2 D
0xC6					M3 C
0xC7					M3 D
0xC8		PPKey	PPKey		
0xC9		ME1Key	ME1Key		
0xCA		ME2Key	ME2Key		
0xCB		ME3Key	ME3Key		
0xD0	PP Clean	PP Clean	PP Clean	PP B (PP Clean)	PP B
0xD1	ME1 Clean	ME1 Clean	ME1 Clean	M1 B (ME1 Clean)	M1 B
0xD2	ME2 Clean	ME2 Clean	ME2 Clean		M2 B
0xD3	ME3 Clean	ME3 Clean	ME3 Clean		M3 B
0xD4		PP UtilA	PP UtilA	PPp2 (PP Clean Preview)	MEh B
0xD5		PP UtilB	PP UtilB		
0xD6		PP UtilC	PP UtilC		
0xD7		ME1 UtilA	ME2 UtilA	M1p2 (ME1 Clean Preview)	
0xD8		ME1 UtilB	ME1 UtilB		PPp2
0xD9		ME1 UtilC	ME1 UtilC		M1p2
0xDA		ME2 UtilA	ME2 UtilA		M2p2
0xDB		ME2 UtilB	ME2 UtilB		M3p2
0xDC		ME2 UtilC	ME2 UtilC		Mhp2

Input Number	DD35	XtenDD HD	XtenDD SD	KayakDD	Kayak SD/HD
0xDD		ME3 UtilA	ME3 UtilA		
0xDE		ME3 UtilB	ME3 UtilB		
0xDF		ME3 UtilC	ME3 UtilC		
0xE0..0xEF	VirtualInput00...15	VirtualInput00...15	VirtualInput00...15	VirtualInput00...15	VirtualInput00...15
0xF0	WHITE	WHITE	WHITE	WHITE	WHITE

Configuring Layout Elements

To configure layout elements

1. In the **Layouts** tab, create layouts and assign the logical sources you configured (see "Assigning Tallies, Input Names, and Output Names to Logical Sources" above) to monitors that can display text (e.g. UMD) or alarms (e.g. UMD, video, text alarm status).
2. Depending on your purposes, assign the appropriate text or alarm levels to specific components within the monitors (e.g. assign an alarm level to a tally component in an UMD, or a text level to the UMD text component).



3. On the **File** menu, click **Save**. Alternatively, click the Save button on the toolbar.
4. On the **Configure** menu, point to **Database**, and then click **Export** to export the database to your multi-viewer.

On the multi-viewer, you can now load the layout containing the monitors that were assigned dynamic text and tallies provided by the Kayak switcher. Input and output names, as well as tally status from the Kayak switcher will be visible on the monitor wall. Any changes made by the switcher's operator will be immediately reflected on the monitor wall.

Serial Port Test Agent

During a setup, it is sometime not clear if the wiring between the multi-viewer and a peripheral device is correct or if the peripheral device sends the expected data. One can connect a serial-port test agent as a peripheral device in XEdit, export the database to the multi-viewer, and then read, on a Web page, the data received on the serial port.

To use a serial port test agent:

1. Select the **Serial port test** device in the equipment library and drag it onto the root of the System hierarchical list. Alternatively, right-click the list root, and then click **Insert Serial port test** on the shortcut menu.
2. Click the **Interconnects** tab in the main window.
3. To connect the test device to the multi-viewer, click the multi-viewer's icon, or the device's, and drag the pointer towards the other.
4. Click the test device's icon, and adjust the port settings to match those of the actual peripheral device you wish to test.
5. Click the connection line between the device and the multi-viewer.
6. In the **Properties** pane, select the appropriate output from the **RS-422 Com Port** list.

   When connected, the serial-port test agent will log all data received from the serial port to a file that you can read using a Web browser.

   Once the database is exported to the multi-viewer, the serial-port test agent starts. The agent opens the serial port and start writing to a log file the data that is received on the port. To access the log file, point your browser to `http://[card IP address]/logs/comm.log`.

   > **Note:** The part `[card IP address]` represents the IP address of the output card where the test agent is connected. You can find the IP address of the output card on XAdmin's System Configuration page (see "Configuring a Multi-Viewer's IP Settings" on page 358).

14 Using the Kaleido Remote Control Protocol

This chapter explains where to obtain information on how the Kaleido-X system can execute commands received via a Gateway, allowing third-party developers and individual users remote access to some Kaleido functions.

Overview

The Kaleido-X system can execute commands received through a Gateway, allowing third-party developers and individual users remote access to some Kaleido functions. For more information, refer to the *Kaleido Remote Control Protocol (Gateway) User's Guide* (Ref. # M770-0900-XXX), available on the DVD that shipped with your system.

> **Note:** The term *Kaleido* is used to describe features common to the Kaleido family. Features exclusive to any one of these products are described using the full product name, e.g. Kaleido-X.

15 Using the Serial to TCP/IP Dispatcher

Overview

The Serial-to-TCP Dispatcher is a piece of software designed to run on a separate PC or embedded into a product (such as the Kaleido-X) and act as a bridge between a serial device and the TCP/IP network.

Note: For more information, refer to the *Serial-to-TCP Dispatcher Protocol* guide (Ref. # M819-0300-XXX), available on the DVD that shipped with your system.

16 Administration and Servicing

This chapter explains how to configure the Kaleido-X network communications, and how to enable hardware and software options. It also describes where to find system status and version information, for troubleshooting or servicing purposes.

Key Concepts

Term	Description
Kaleido-RCP2	The Kaleido-RCP2 is a multi-function remote control panel designed for use with Miranda's Kaleido-X series multi-viewer models. Ethernet connectivity allows multiple RCP2 users to access multiple Kaleido-X systems, allowing convenient access to real-time operating features.
Audio Bridge Terminal	The Audio Bridge Terminal (ABT) is an external audio multiplexer/serializer for the Kaleido-X series multi-viewer models.
XEdit	XEdit is a Java Web Start client used to create layouts for the monitor wall, and to configure the multi-viewer, from your PC or laptop.
XAdmin	XAdmin is a Web client that your system administrator uses to manage the multi-viewer system.
System snapshot	The Kaleido-X system generates data to keep track of certain events. This data is stored as log files that can be extracted from the system as a compressed ZIP archive created when requested by the user for specific purposes (e.g. troubleshooting). This ZIP archive is called a system snapshot.

Term	Description
System status	A system status refers to a live summary from within XAdmin. This summary is based on the health status of each module in your multi-viewer system (see "Viewing a Multi-Viewer's Status Information" on page 386).
Version	Each software, firmware, and hardware release for the various elements that constitute your Kaleido-X system (e.g. XEdit, XAdmin, etc.) is associated with a version number (see "Viewing Kaleido-X Version Information" on page 387).

Default IP Settings

Multi-viewers are shipped with the following default settings:

	KMV-3901/3911	X16	4RU	7RU	7RU Expansion
System IP address	192.168.3.31	10.0.3.70	10.0.3.70	10.0.3.70	10.0.3.70
Network mask	255.255.255.0	255.255.0.0	255.255.0.0	255.255.0.0	255.255.0.0
Gateway	192.168.3.1	10.0.0.1	10.0.0.1	10.0.0.1	10.0.0.1
Output A	—	—	10.0.3.69	10.0.3.66	10.0.3.66
Output B	—	—	10.0.3.68	10.0.3.67	10.0.3.67
Output C	—	—	—	10.0.3.68	10.0.3.68
Output D/EXP	—	—	—	10.0.3.69	—
Output A (frame B)	—	—	—	—	10.0.3.61
Output B (frame B)	—	—	—	—	10.0.3.62
Output C (frame B)	—	—	—	—	10.0.3.63

Note: If the IP address of the multi-viewer has been changed (i.e. it no longer corresponds to the as-shipped configuration), it is still possible to determine the current setting. To determine the IP address of your multi-viewer, see "Finding a Multi-Viewer's System IP Address and Application Version" on page 362.

Hardware and Software Options

You can purchase various software and hardware options to expand your multi-viewer's capabilities. The following tables list options that can be enabled and disabled via the XAdmin Status and Options page (see "Enabling Options" on page 371).

Kaleido-X (4RU, 7RU, and 7RU × 2)

Module	Option	Part No.	Feature	Notes
INPUT	3G	KXS-3Gbps	3Gbps format license	1/input module
	CC/XDS	KXS-CSX	CC/subtitling and XDS data license	1/input module
	Dolby E	KXS-Dolby	Dolby metadata extraction license	1/input module
	Embedded Audio	KXS-HD-EMB	HD/SD-SDI embedded audio license	1/input module
		KXS-SD-EMB	SD-SDI embedded audio license	1/input module
	Loudness	KXS-Loudness	Loudness level measurement license	1/input module
OUTPUT	Display 90-Degree Rotation	KXS-Rotator	Display rotation license	1/output module
	3D	KXS-3DLA	Stereoscopic display license (line alternate mode) for Kaleido-X	• 1/output module • After enabling the 3D support option in XAdmin, refresh the current layout or load another one, for the change to be reflected on the monitor wall.

Kaleido-X16

Module	Option	Part No.	Feature
INPUT	3G	KXS-X16-3Gbps	3Gbps format license (1/frame)
	CC/XDS	KXS-X16-CSX	CC/subtitling and XDS data license (1/frame)
	Dolby E	KXS-X16-Dolby	Dolby metadata extraction license (1/frame)
	Embedded Audio	KXS-X16-HD-EMB	HD/SD-SDI embedded audio license (1/frame)
		KXS-X16-SD-EMB	SD-SDI embedded audio license (1/frame)
	Loudness	KXS-X16-Loudness	Loudness level measurement license (1/frame)
OUTPUT	Display 90-Degree Rotation	KXS-X16-Rotator-S	Rotation license for Kaleido-X16-S
		KXS-X16-Rotator-D	Rotation license for Kaleido-X16-D
	SDI Monitoring Output	KXS-X16-HDM-S	HD-SDI monitoring output for Kaleido-X16-S
		KXS-X16-HDM-D	HD-SDI monitoring output for Kaleido-X16-D
	3D	KXS-X16-3DLA-S	Stereoscopic display license (line alternate mode) for Kaleido-X16-S
		KXS-X16-3DLA-D	Stereoscopic display license (line alternate mode) for Kaleido-X16-D **Note:** After enabling the 3D support option in XAdmin, refresh the current layout or load another one, for the change to be reflected on the monitor wall.
ROUTER	SDI Router Output	KXS-X16-RTR16x2	Dual router output option (1/frame)

KMV-3901/3911

Module	Option	Part No.	Feature
INPUT	3G	KMV-39N1-8XN-OPT-3GBPS	3Gbps signal decoding option (8 inputs)
	Embedded Audio	KMV-39N1-8XN-OPT-AUD	Embedded audio extraction license (8 inputs)

KMV-3901/3911

Module	Option	Part No.	Feature
OUTPUT	Second Head Activation	KMV-39N1-NX1-OPT-OP2	Output two enabled license
	SDI Monitoring Output	KMV-3911-NX1-OPT-SDI	HD-SDI monitoring output for KMV-3911 (1 SDI output)
		KMV-3911-NX2-OPT-SDI	HD-SDI monitoring output for KMV-3911 (2 SDI outputs)
	3D	KMV-39NN-8x2-OPT-3DLA	Stereoscopic display license (line alternate mode) for KMV-3901/3911
		KMV-39NN-8x1-OPT-3DLA	Stereoscopic display license (line alternate mode) for KMV-3901/3911-8x1 **Note:** After enabling the 3D support option in XAdmin, refresh the current layout or load another one, for the change to be reflected on the monitor wall.

Dashboard Messages

The following tables explain messages that may appear in the *Status dashboard* (lower right corner) and in the *Upgrade dashboard* (lower left corner), on the Monitor wall. An "x" in the 7RU, 4RU, X16, or KMV column indicates that the message applies to a specific multi-viewer model, namely Kaleido-X (7RU), Kaleido-X (4RU), Kaleido-X16, or KMV-3901/3911.

Status dashboard messages

Message	Description	7RU	4RU	X16	KMV
PSU A absent	PSU A is absent, overheating, has a DC circuitry fault condition, or no current is drawn from it.		x		
PSU B absent	PSU A is absent, overheating, has a DC circuitry fault condition, or no current is drawn from it.		x		
PSU A 48 V	This message indicates that either PSU A is absent, overheating, has a DC circuitry fault condition, or that no current is drawn from it.	x			
PSU B 48 V	PSU A is absent, overheating, has a DC circuitry fault condition, or no current is drawn from it.	x			

Status dashboard messages

Message	Description	7RU	4RU	X16	KMV
PSU A 48 V Fuse	PSU A fuse is broken.	x	x		
PSU B 48 V Fuse	PSU B fuse is broken.	x	x		
PSU A 12 V	PSU A is absent, overheating, has a DC circuitry fault condition, or no current is drawn from it.			x	
PSU B 12 V	PSU A is absent, overheating, has a DC circuitry fault condition, or no current is drawn from it.			x	
PSU A AC	PSU A power cord is unplugged.		x		
PSU B AC	PSU B power cord is unplugged.		x		
PSU A Vendor ID Unknown	*not relevant*		x		
PSU B Vendor ID Unknown	*not relevant*		x		
PSU A Temperature	*not supported*		x		
PSU B Temperature	*not supported*		x		
Duplicate IP Address Detected	*self-explanatory*	x	x	x	x
Ethernet Link Down	*self-explanatory*	x	x	x	x
Fan 1 (replace whole module if in error)	Fan 1 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 2 (replace whole module if in error)	Fan 2 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 3 (replace whole module if in error)	Fan 3 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 4 (replace whole module if in error)	Fan 4 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 5 (replace whole module if in error)	Fan 5 is running too low, based on the thresholds set at hardware level, or is broken.		x		

Status dashboard messages

Message	Description	7RU	4RU	X16	KMV
Fan 6 (replace whole module if in error)	Fan 6 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 7 (replace whole module if in error)	Fan 7 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 8 (replace whole module if in error)	Fan 8 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Fan 9 (replace whole module if in error)	Fan 9 is running too low, based on the thresholds set at hardware level, or is broken.		x		
Rear Fan 1 (replace whole module if in error)	Fan 1 is running too low, based on the thresholds set at hardware level, or is broken.	x			
Rear Fan 2 (replace whole module if in error)	Fan 2 is running too low, based on the thresholds set at hardware level, or is broken.	x			
Rear Fan 3 (replace whole module if in error)	Fan 3 is running too low, based on the thresholds set at hardware level, or is broken.	x			
Rear Fan 4 (replace whole module if in error)	Fan 4 is running too low, based on the thresholds set at hardware level, or is broken.	x			
Rear Fan 5 (replace whole module if in error)	Fan 5 is running too low, based on the thresholds set at hardware level, or is broken.	x			
Rear Fan 6 (replace whole module if in error)	Fan 6 is running too low, based on the thresholds set at hardware level, or is broken.	x			
critical temp status	*not supported*	x	x		
high temp status	*not supported*	x	x		
Board High Temperature	Temperature alarm, based on the threshold set by the software.	x	x		
Board Temperature	Board temperature measurement.	x	x		
Blower North East (replace whole module if in error)	Blower North East is running too low, based on the thresholds set at hardware level, or is broken.			x	

Status dashboard messages

Message	Description	7RU	4RU	X16	KMV
Blower South East (replace whole module if in error)	Blower South East is running too low, based on the thresholds set at hardware level, or is broken.			x	
Blower North West (replace whole module if in error)	Blower North West is running too low, based on the thresholds set at hardware level, or is broken.			x	
Blower South West (replace whole module if in error)	Blower Sort West is running too low, based on the thresholds set at hardware level, or is broken.			x	

Upgrade dashboard messages

Message	Description	7RU	4RU	X16	KMV
Error during firmware upgrade. Firmware upgrade cannot proceed until legacy KXO (<3.00) are removed from frame B.	This message will appear on an expansion frame with expansion enabled and with cards in frame B running software/firmware older than version 3.00. To upgrade these cards, transfer them to frame A.	x			
Error during firmware upgrade. Card presence from frame B could not be verified.	This message will appear as a side effect of the presence of cards in frame B running a version older than version 3.00. The upgrade will not be permitted on any card in the frame until these cards are removed from frame B. To upgrade these cards, transfer them to frame A.				
Error during firmware upgrade. Duplicate IP has been detected. We cannot continue checking the Firmware version.	This message will appear if duplicate IP addresses are detected between different KXO cards in the frame. As long as this is the case, no upgrade is possible. You must resolve the duplicate IP address issue before resuming the upgrade.	x	x		
Error during firmware upgrade. The current firmware version could not be verified.	This message will appear if software cannot retrieve firmware version from the card(s). This may indicate an issue with the hardware.	x	x		

Upgrade dashboard messages

Message	Description	7RU	4RU	X16	KMV
Error during safemode upgrade. The current safemode version could not be verified.	This message will appear if software cannot retrieve Safemode version from the card(s). This may indicate an issue with the hardware.	x	x		
Error during safemode upgrade. Card presence from frame B could not be verified.	This message will appear as a side effect of the presence of cards in frame B running a version older than version 3.00. The upgrade will not be permitted on any card in the frame until these cards are removed from frame B. To upgrade these cards, transfer them to frame A.	x			
Cannot upgrade card in this slot (if any). Please remove card from [slot number].	This message will appear on an expansion frame if frame B contains cards running software/firmware older than version 3.00. The upgrade will not be permitted on any card in the frame until these cards are removed from frame B. To upgrade these cards, transfer them to frame A.	x			
Cannot upgrade card in this slot. Move card to frame A or swap with card in Frame A. Upgrade will proceed after current upgrade.	This message will appear on an expansion frame if frame B contains cards running software/firmware older than version 3.00. The upgrade will not be permitted on any card in the frame until these cards are removed from frame B. To upgrade these cards, transfer them to frame A.	x			
Cannot continue the upgrade until card in this slot is moved to frame A.	This message will appear on an expansion frame with expansion enabled and with cards in frame B running software/firmware older than version 3.00. To upgrade these cards, transfer them to frame A.	x			

Network Considerations & Port Usage

Network Considerations

Kaleido-X systems generate a low to moderate amount of client-to-server data traffic, and therefore have a minimal bandwidth impact on a network.

TCP/UDP Port Usage

The various Kaleido-X services require access to specific ports. In networks where a firewall is present between device A and device B, the ports used to communicate **from** device A **to** device B must be open on the incoming (external) side of the firewall.

> **Note:** All necessary ports are open by default on the multi-viewer. There is no mechanism provided for changing the default settings.

From Client to Multi-Viewer

The following ports must be open on the Client (e.g. workstation running XEdit):

Service	Port	Transport	Notes
HTTP	80	TCP	Used by XEdit and XAdmin
	5122	TCP	Used by XEdit for "keep alive" (heartbeat)
	5432	TCP	Used by XEdit for export operations
	13000	TCP	Online connection
	13100	TCP	Used for calibration data from XEdit
RCP2	5120	TCP	Used to listen for Kaleido-X discovery packets
	10000	TCP	RCP2 protocol
	10001	TCP	RCP2 protocol
	5120	UDP	On multicast 230.8.8.9 for RCP2
	5121	UDP	For RCP2

From Multi-Viewer to Client

Service	Port	Transport	Notes
Java RMI	1024–5000[1] 49152-65535[2]	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Application Server.

1. For Windows XP and earlier
2. For Windows 7

From Multi-Viewer to Multi-Viewer

The following ports, used for inter-frame communications, are open by default on all Kaleido-X systems:

Service	Port	Transport	Notes
SSH	22	TCP	Secure Shell Login is required to login to a multi-viewer for maintenance.
Java Jini	4160	TCP	Responsible for discovery and communications between devices/services on a network.
HTTP	8080	TCP	
	8082	TCP	Internal communication
	8083	TCP	Internal communication
	8084	TCP	Internal communication
	8085	TCP	Internal communication
	8086	TCP	Internal communication
	8087	TCP	Used for debugging purposes
	8090	TCP	Web service
	32769	TCP	filenet-rpc
	5120	UDP	On multicast 230.8.8.9 for RCP2
	7572	UDP	On multicast 230.8.8.8 for “keep-alive” (heartbeat)
	7571	UDP	For “keep-alive” (heartbeat)

From iControl to Multi-Viewer

Service	Port	Transport	Notes
Java RMI	32768–65535	TCP	Remote Method Invocation (client/server communication). Dynamic Allocation of ports. Required for communication between client and Application Server. This range can be restricted to match specific security requirements. A minimum of 4000 ports should be allocated.

From Multi-Viewer to/from RCP2

The following ports, used for communications to/from RCP2 control panels, are open by default on all Kaleido-X systems:

Service	Port	Transport	Notes
RCP2	5120	TCP	Used to listen for Kaleido-X discovery packets
	10000	TCP	RCP2 protocol
	10001	TCP	RCP2 protocol
	5120	UDP	On multicast 230.8.8.9 for RCP2
	5121	UDP	For RCP2

From Multi-Viewer to Peripheral Devices

Service	Port	Transport	Notes
SMTP	25	TCP	Simple Mail Transfer Protocol, for e-mail alerts.

From Peripheral Devices to Multi-Viewer

The following ports must be open on peripheral devices (e.g. router controllers):

Port	Transport	Notes
2000	TCP	Used to control the Kaleido-X internal router via the Snell (Pro-Bel) SW-P-02 protocol
4381	TCP	Used to control the Kaleido-X internal router via the Nevion (Network) protocol
5194	TCP	Used to control the Kaleido-X internal router via the NVISION Ethernet protocol - Compact router protocol.
14000	TCP	Used to control the Kaleido-X internal router via the Snell (Pro-Bel) SW-P-08 protocol

Router drivers also use default ports:

Driver	Port	Transport	Notes
ETL	4000	TCP	
GVG 7000 Native	12345	TCP	

Driver	Port	Transport	Notes
NVISION Ethernet protocol - Enterprise router	9193	TCP	
VikinX Modular	4381	TCP	
Quintech	9100	TCP	
Sony HKSPC	12345	TCP	GVGNP Emulator
Utah RCP-3	5001	TCP	SC-4 Ethernet
Snell (Pro-Bel) SW-P-02	2000	TCP	
Snell (Pro-Bel) SW-P-08	14000	TCP	

Note: This is configurable in XEdit—you can choose any UDP or TCP/IP port to use for communications between the multi-viewer and an external router.

From Multi-Viewer to/from SNMP Devices

Service	Port	Transport	Notes
SNMP	161	UDP	Simple Network Management Protocol, used for communications between multi-viewer and peripheral devices (e.g. sending get, get-next, and set commands to an SNMP agent, and receiving the response).
	162	UDP	Simple Network Management Protocol, used for receiving traps (alerts) from peripheral devices.

From Multi-Viewer to/from NTP Server

The following ports, used for communications to/from Network Time Protocol servers, are open by default on all Kaleido-X systems:

Service	Port	Transport	Notes
NTP	123	TCP	Used for Network Time Protocol synchronization. Port needs to be open in both directions.

Detailed Directions

Assigning an IP Address to Each Device in Your System

Multi-viewers and most peripheral devices that are part of a Kaleido-X system communicate through a TCP/IP network. Configuring your system's network parameters includes the following:

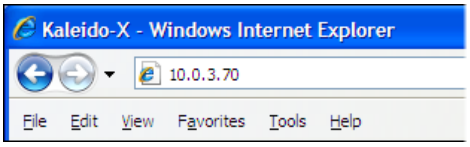
- Assigning an IP address, and specifying the appropriate network mask, gateway address, and a system name for each multi-viewer. Refer to "Default IP Settings" on page 346, and to "Configuring a Multi-Viewer's IP Settings" on page 358.
- Configuring the Kaleido-RCP2, if available. Refer to "Configuring the Kaleido-RCP2" on page 365.
- Configuring the Audio Bridge Terminal (ABT), if available. Refer to "Configuring an Audio Bridge Terminal" on page 368.

See also:
- For more information on the Kaleido-RCP2, refer to the *Kaleido-RCP2 Guide to Installation and Operation*, available on the DVD that shipped with your system.
- For more information on the ABT, refer to the *Audio Bridge Terminal Guide to Installation and Operation*, available on the DVD that shipped with your system.

Configuring a Multi-Viewer's IP Settings

To change the Kaleido-X's system IP address, and adjust your system's configuration:

1. Configure your client PC with an IP address in the same range as the IP address of the multi-viewer (see "Changing the Client PC's IP Address" on page 363).
2. Open a Web browser window and type the multi-viewer's IP address in the address bar.[1]



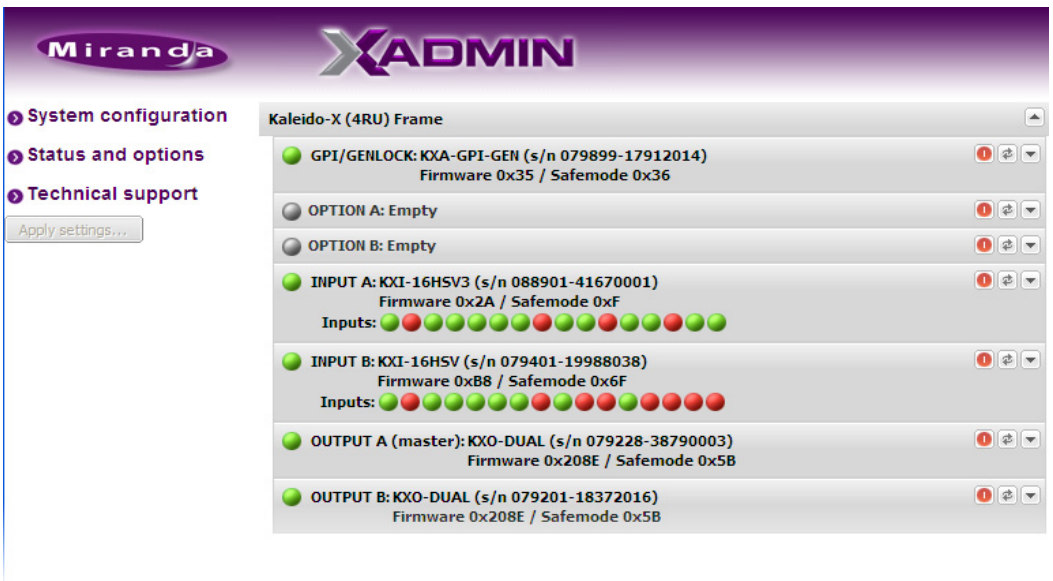
The Kaleido-X home page appears:

1. The multi-viewer must have Kaleido-X software version 2.10 or later.

XADMIN
XEDIT
ROUTER CONTROL
Kaleido-X version 4.00 build 3801
XEdit version 4.00 Build 3801
Download the Java Runtime Environment installer required to use XEdit.

3. Click the **XAdmin** button.

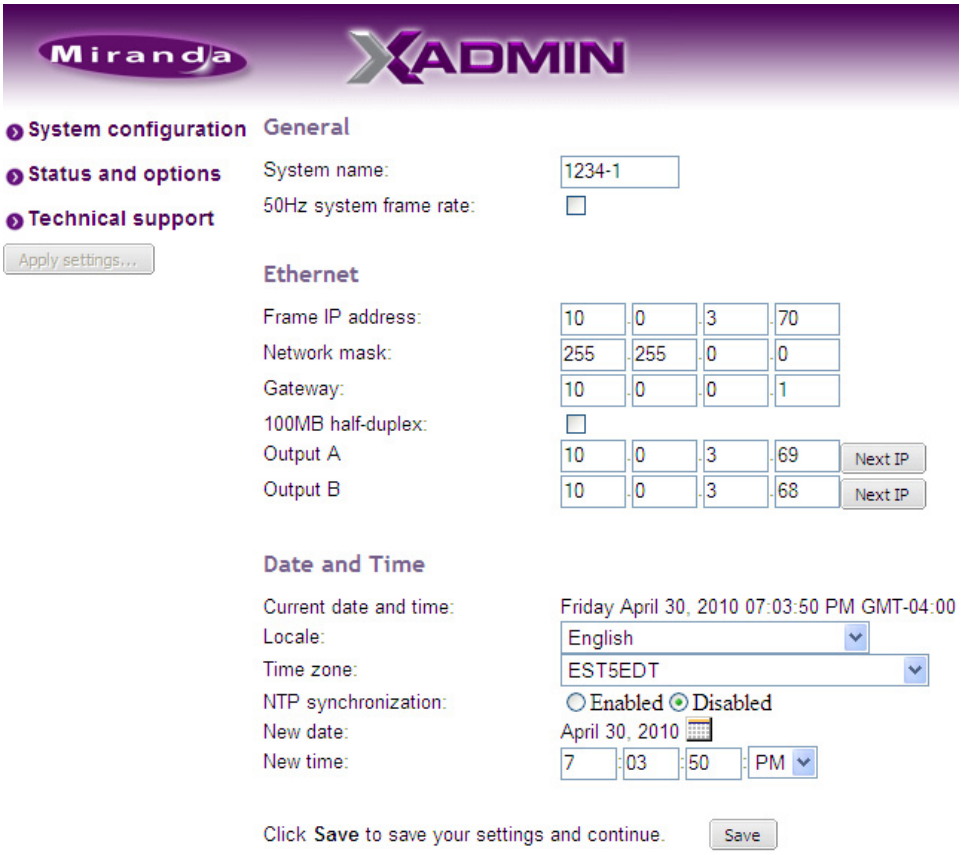
   The XAdmin Status and Options page appears:



XAdmin Status and Options page

4. Click **System configuration**, in the navigation area on the left of the page.

   The System Configuration page appears, showing the current system name, IP address, network mask, gateway and output cards IP addresses, as well as the date and time settings.



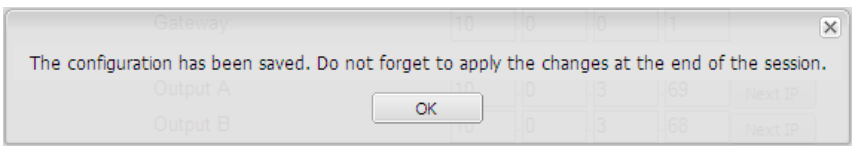
– The default system name corresponds to your order number. Type a different name for your system if you wish.

> **Note:** Only lower-ASCII characters are allowed in the system name. Braces and tilde are not allowed.

– If this system requires a 50Hz frame rate, select the corresponding check box.
– Adjust the date and time settings, as required. Clocks in your layouts will then display date and time in the applicable format for the selected locale.

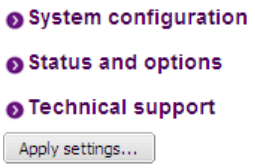
5. Type the appropriate IP address information in each of the boxes, and then click **Save**.

   The new settings are saved locally:



6. Click **OK**.

   The **Apply settings** button becomes available.



7. Click **Apply settings**.

   The Kaleido-X system must be restarted for changes to the network configuration to take effect. A message appears prompting you to reboot the system immediately.

8. Click **OK**.

> **Note:** Settings cannot be applied to a multi-viewer system while an upgrade is in progress. If the multi-viewer does not reboot after 10 seconds or so, try clicking **Apply settings** again after a minute or two, until the multi-viewer reboots.

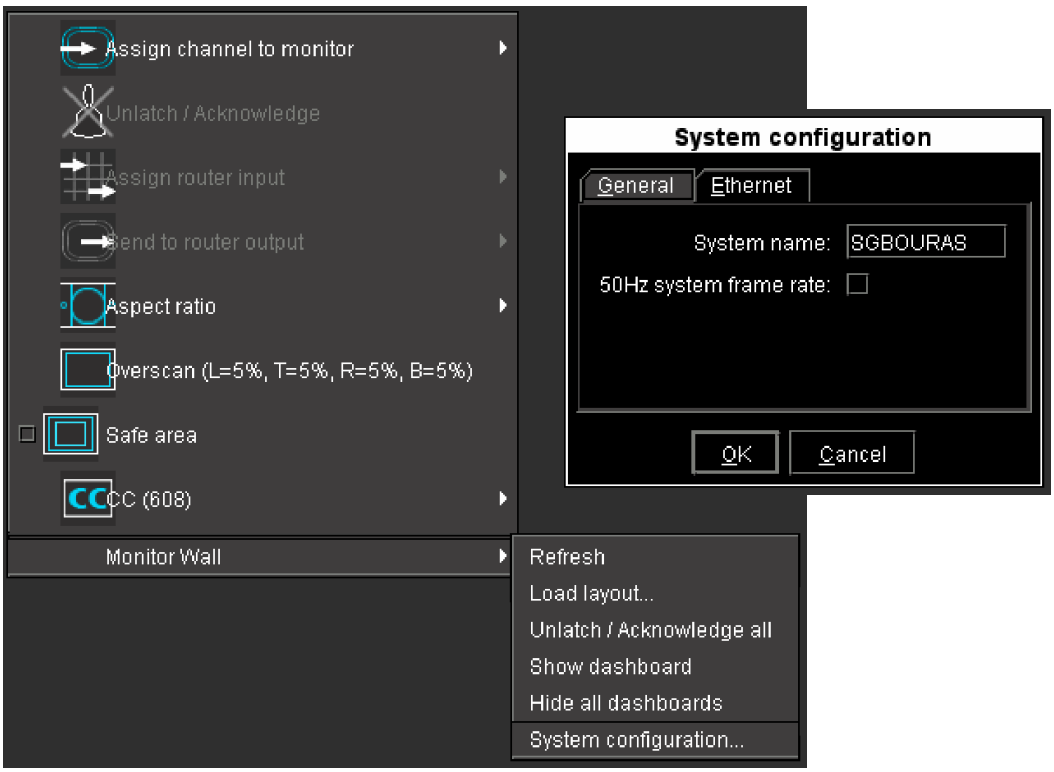
9. Remember to change your client PC's IP address to one that matches the new subnet. You will also need to edit the XAdmin URL in your Web browser's address bar, in order to log on to the multi-viewer again.

Configuring a Multi-Viewer's IP Settings Without a Client PC

The IP address, system name, and other parameters can be set via a control panel, directly on the monitor wall.

To change the multi-viewer's system IP address, and adjust your system's configuration:

1. Connect a mouse to any USB port on the multi-viewer.
2. Right-click anywhere on the monitor wall. On the shortcut menu, point to **Monitor Wall**, and then click **System Configuration.**
3. Change the configuration settings as necessary, and then click **OK**.



4. Click **Yes** when prompted to restart the system.

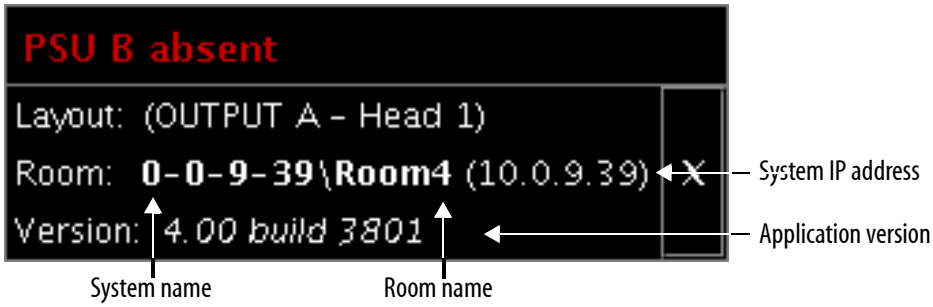
Finding a Multi-Viewer's System IP Address and Application Version

To find the system IP address, system name and application version:

- Right-click anywhere on the monitor wall. On the shortcut menu, point to **Monitor Wall**, and then click **Show dashboard** to display the dashboard associated with the current output head.

  A small window appears, revealing the system IP address and the system version.

Partial view of a monitor wall display showing dashboard at the bottom right



Enlarged view of dashboard.

Changing the Client PC's IP Address

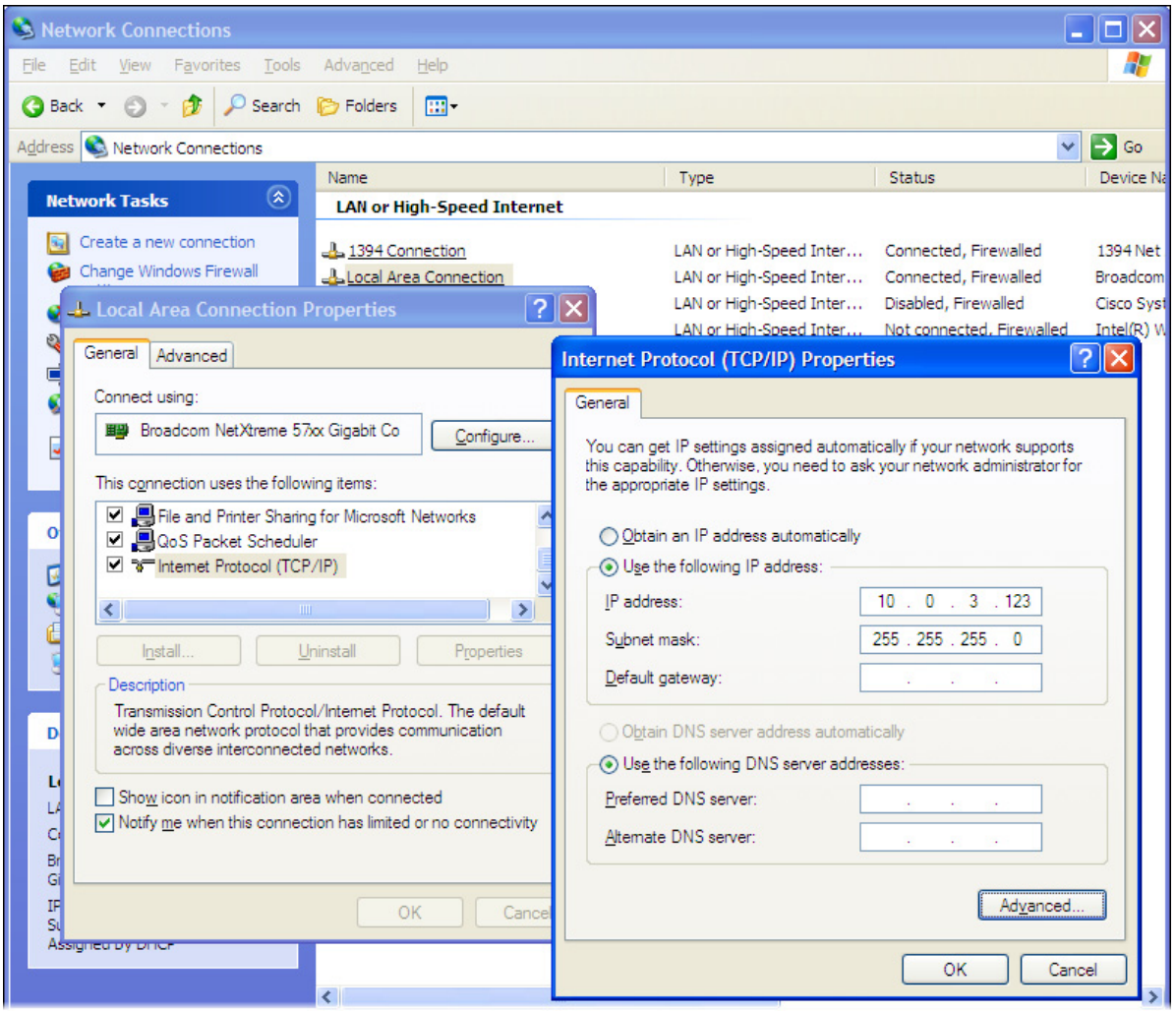
Both the client computer that you will use to communicate with the multi-viewer (via XAdmin and XEdit) and the multi-viewer itself must have IP addresses within the same subnet. The following procedure applies to a typical Windows XP system. For Windows 7, see "Changing an IP Address on Windows 7" on page 365.

Changing an IP Address on Windows XP

To change the IP address of a client PC that has Windows XP:

1. On the Windows XP **Start** menu, point to **Control Panel**, right-click **Network Connections**, and then click **Open** on the shortcut menu.
2. In **Network Connections**, right-click **Local Area Connection**, and then click **Properties** on the shortcut menu.
3. In **Local Area Connection Properties**, select **Internet Protocol (TCP/IP)** from the list on the **General** tab, and then click **Properties**.

   The **Internet Protocol (TCP/IP) Properties** window opens.



4. On the **General** tab, click **Use the following IP address**.

5. Type an IP address in the same range as the default IP address of the Kaleido-X multi-viewer. For example, if the IP address of the Kaleido-X multi-viewer is "10.0.3.70", then the IP address of your client PC could be "10.0.3.123". If you are unsure, contact your network administrator.
6. Type a subnet mask in the same range as that of the Kaleido-X.
7. Click **OK**.
8. In **Local Area Connection Properties**, click **OK**.

Changing an IP Address on Windows 7

To change the IP address of a client PC that has Windows 7:

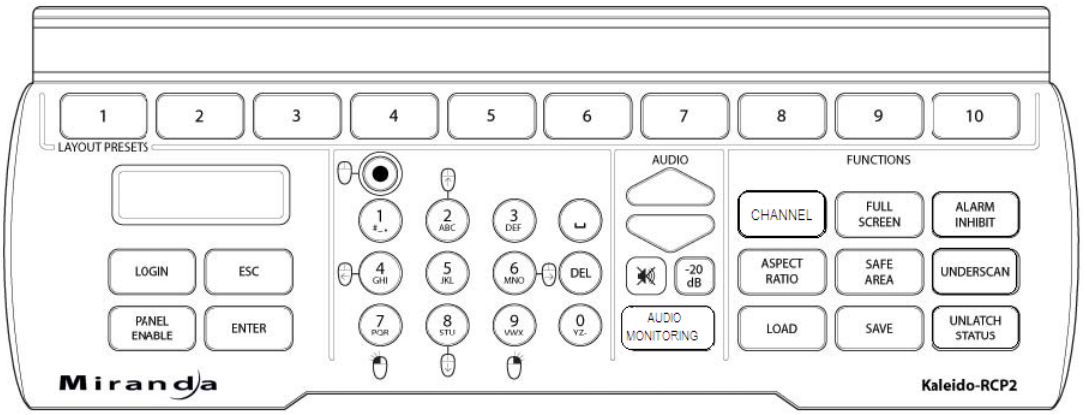
1. Click the **Start** button, and then click **Control Panel**. In the search box, type "adapter", and then, under **Network and Sharing Center**, click **View network connections**.
2. In **Network Connections**, right-click **Local Area Connection**, and then click **Properties**. If the system prompts you for an administrator password or confirmation, type the password or provide confirmation.

   The **Local Area Connection Properties** window opens.
3. On the **Networking** tab, under **This connection uses the following items**, click **Internet Protocol Version 4 (TCP/IPv4)**, and then click **Properties**.

   The **Internet Protocol Version 4 (TCP/IPv4) Properties** window opens.
4. On the **General** tab, click **Use the following IP address**.
5. Type an IP address in the same range as the default IP address of the multi-viewer. For example, if the IP address of the multi-viewer is "10.0.3.70", then the IP address of your client PC could be "10.0.3.123". If you are unsure, contact your network administrator.
6. Type a subnet mask in the same range as that of the multi-viewer.
7. Click **OK**.
8. In **Local Area Connection Properties**, click **OK**.

Configuring the Kaleido-RCP2

The Kaleido-RCP2 is a multi-function remote control panel designed for use with Miranda's Kaleido-X. Ethernet connectivity allows multiple RCP2 users to access multiple Kaleido-X systems, allowing convenient access to the real-time operating features of the Kaleido-X. When logged on to a Kaleido-X via its Ethernet connection, the RCP2 user can control various operating features of the Kaleido-X.



Before you can use the RCP2 to operate your Kaleido-X, you must set up the Ethernet connection between the two devices. By default, the Kaleido-RCP2 is shipped with DHCP enabled, so it will automatically be assigned an IP address by a DHCP server. If no DHCP server is present on the network, the Kaleido-RCP2 will default to the static IP address 10.0.3.191.

Notes

- The Kaleido-RCP2 is powered through the RJ-45 Ethernet connector. There is no power ON/OFF button, so the device is ON whenever a powered Ethernet cable is connected.
- If you purchased more than one Kaleido-RCP2 units, keep in mind that they all ship with the same default static IP address. Make sure to assign them different static IP addresses before connecting them to the network if DHCP is not used.
- The time-out period before the RCP2 defaults to its static address is 1 minute. To speed up the initialization, disable the DHCP option.

To assign a static IP address to the RCP2:

1. Press and hold the ENTER button until the ESC button lights up, to display the configuration menu.
2. Press the **8** key (to move down the list) until ETHERNET OPTIONS appears on the LCD display.
3. Press the ENTER key to display the ETHERNET OPTIONS menu.
4. Select the IP ADDRESS menu using the **2** key (to move up in the list) or the **8** key (to move down the list), and then press ENTER.
5. Using the numeric keypad, type the chosen IP address, and then press ENTER.
6. Select the NETWORK MASK menu using the **2** key (to move up in the list) or the **8** key (to move down the list), and then press ENTER.
7. Using the numeric keypad, type the chosen network mask, and then press ENTER.

You have assigned a static IP address to the RCP2.

To select a room for the RCP2:

1. Press and hold the ENTER button until the ESC button lights up, to display the configuration menu.

2. In the ROOM SELECTION display, press ENTER again to get the room list from the Kaleido-X systems that are currently available on the network.
3. In the room list, select the room you wish to access by pressing the **2** key (to move up in the list) or the **8** key (to move down the list).

> **Note:** By default, the video outputs of a Kaleido-X are assigned to specific rooms:
>
> – On a Kaleido-X (7RU), the two DVI/VGA outputs from each of the dual-head Output cards A, B, C and D are assigned to ROOM1, ROOM2, ROOM3 and ROOM4 respectively.
>
> – On a Kaleido-X (4RU), the two DVI/VGA outputs from each of the dual-head Output cards A and B are assigned to ROOM1 and ROOM2 respectively.
>
> – On a Kaleido-X16-D, the HDMI outputs from each of the Output modules are assigned to ROOMX16.
>
> – On a Kaleido-X16-S, the HDMI output is assigned to ROOMX16.
>
> – On a KMV-3901/3911, the HDMI outputs are assigned to ROOM1.

4. When the appropriate room name is highlighted, press ENTER to accept the new selection.
5. When prompted, log on to the selected room. See "Logging on to the Kaleido-RCP2" on page 368.

Connecting the RCP2 to Other Kaleido-X Systems

The unicast IP feature enables a Kaleido-RCP2 to find up to three Kaleido-X systems on different subnets and connect to them (via network gateways), while maintaining connections to Kaleido-X systems in its own subnet.

> **Notes**
>
> - To navigate the RCP2 menu, press the **2** key to move up, or the **8** key to move down.
> - There is no need to configure unicast IP addresses for Kaleido-X systems on the same subnet as the RCP2.

To configure a unicast IP address on the RCP2:

1. Press and hold the ENTER button until the ESC button lights up, to display the configuration menu.
2. Select ETHERNET OPTIONS on the LCD display, and then press ENTER.
3. Select **Unicast host IP**, and then press ENTER.
4. Select **Enable IP 1**, and then press ENTER.

   The Enable IP x parameter instructs the RCP2 to query the selected IP address for a list of rooms.
5. Select **Host IP ADDR**, and then press ENTER.

6. Using the numeric keypad, type the IP address of a Kaleido-X on a remote subnet, and then press ENTER.
7. Repeat step 4 to 6 to add unicast IP addresses for up to three remote Kaleido-X systems.

Logging on to the Kaleido-RCP2

As a network device, the RCP2 provides access to any room configuration on any Kaleido-X system on the network. As a security measure, access is controlled by a login procedure.

To log on to a Kaleido-X system from the RCP2:

1. Press the LOGIN key.

   The following message will appear on the LCD display:

   LOGIN Position
   Admin
2. Press ENTER to select "Admin".

   A message prompting you to enter a password will appear on the LCD display.
3. Press ENTER again (by default, there is no password).

   The message "Access granted" will appear on the LCD display if the login is successful. If a mouse is connected to the RCP2, then you should be able to see and move the mouse pointer on the monitor wall.

> **Note:** If at any time the message "Target system is offline" or "No login list available" appears on the LCD display, press the ESC, ENTER and DEL keys simultaneously and go back to step 1.

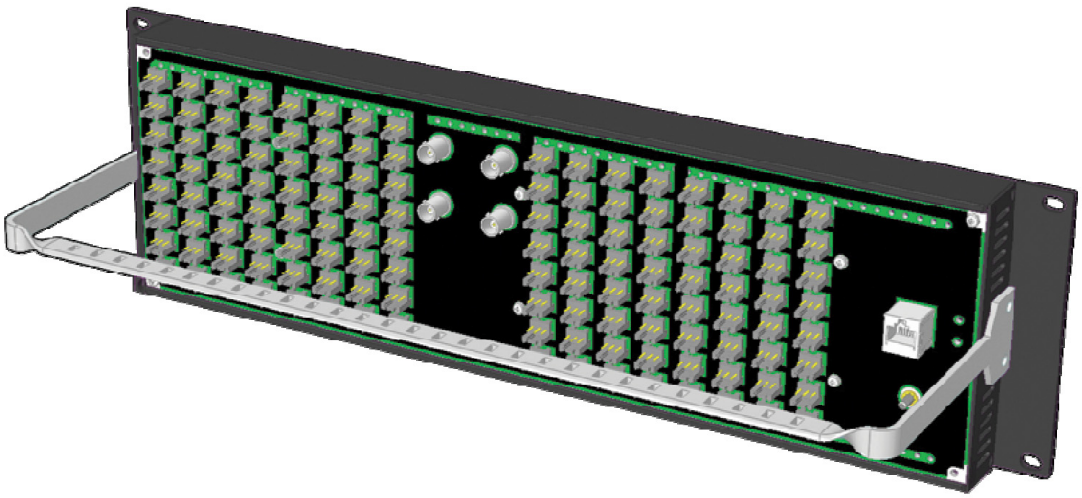
For more information, refer to the *Kaleido-RCP2 Guide to Installation and Operation*, available on the DVD that shipped with your system.

Configuring an Audio Bridge Terminal

> **Note:** The KMV-3901/3911 is not compatible with the Audio Bridge Terminal.

The optional Audio Bridge Terminal (ABT) is an external audio multiplexer/serializer for the Kaleido-X. The Kaleido-X supports up to 128 inputs, and all of the video input connectors are located on the rear panels associated with the KXI series of cards.

There is not enough space on the rear panels to also include the audio connectors. The ABT provides connector space for the audio signal inputs, and multiplexes all the audio signals into combined serial feeds on coaxial cables that connect to the KXI cards.



Note: The ABT is powered through the RJ-45 Ethernet connector. There is no power ON/OFF button, so the device is ON whenever a powered Ethernet cable is connected.

To configure the IP address and other network settings of the ABT:

1. Connect a PC to a switch.
2. Referring to "Changing the Client PC's IP Address" on page 363, configure the PC with the following network settings:

DHCP	Off
Static IP address	10.0.0.1
Subnet mask	255.255.0.0
Default gateway	10.0.0.1

3. Apply power to the Audio Bridge Terminal and make sure it is connected to the same switch as the PC. If the switch is Power over Ethernet (PoE) enabled, simply connect it to the unit using an Ethernet cable. If not, PoE mid-span ("inserter") equipment must be placed between the switch and the Audio Bridge Terminal.
4. Press the RESET button (located on the right-hand side of the ABT rear panel beside the ETHERNET/POWER RJ-45 connector) for at least 1 second. The Audio Bridge Terminal will reboot with the following static network configuration:

DHCP	OFF

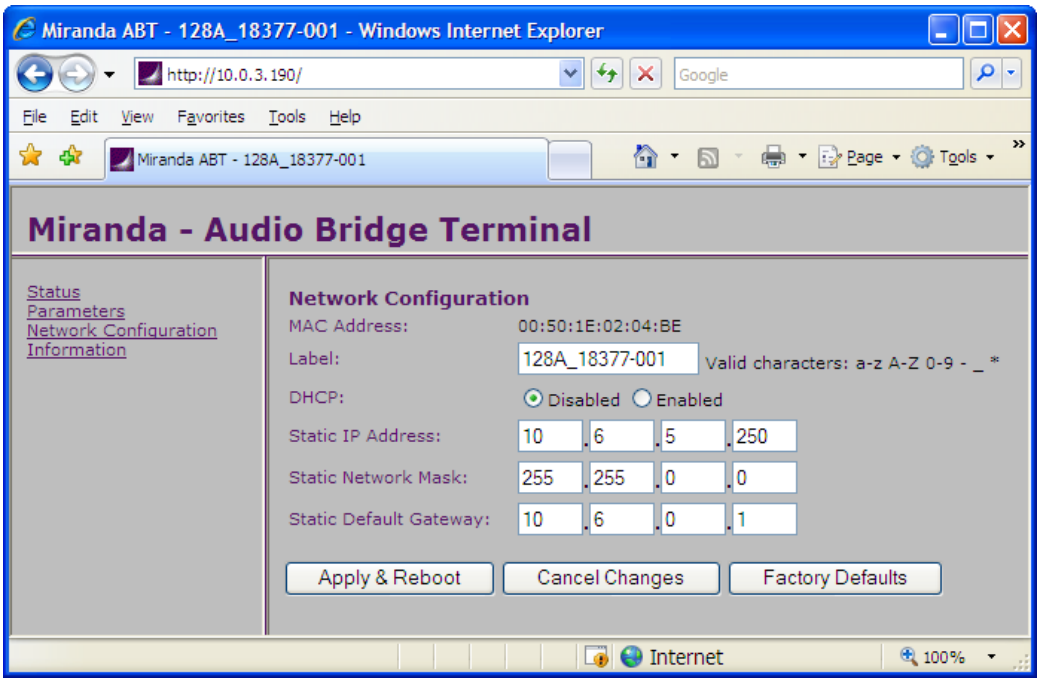
Static IP address	10.0.3.190
Subnet mask	255.255.0.0
Default gateway	10.0.0.1

5. Using a Web browser on the PC, connect to the ABT using the following address: 10.0.3.190.

   The home page of the ABT's built in Web server is displayed.

6. Click **Network Configuration** (in the navigation pane).

   The Network Configuration page is displayed.



7. Change the ABT's network settings, as necessary, and then click **Apply & Reboot**.

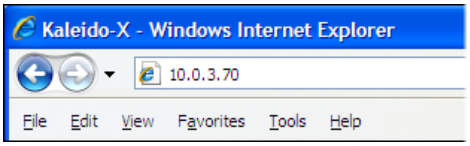
> **Note:** If you purchased more than one Audio Bridge Terminal unit, keep in mind that they all ship with the same default static IP address. Make sure to assign each of them a different static IP address before connecting them to the network, if DHCP is not used.

For more information, please refer to the *Audio Bridge Terminal Guide to Installation and Operation*, available on the DVD that shipped with your system.

Enabling Options

To enable options on a multi-viewer:

1. From a workstation on the same subnet, open a Web browser window and type the IP address of the multi-viewer in the address bar.[1]

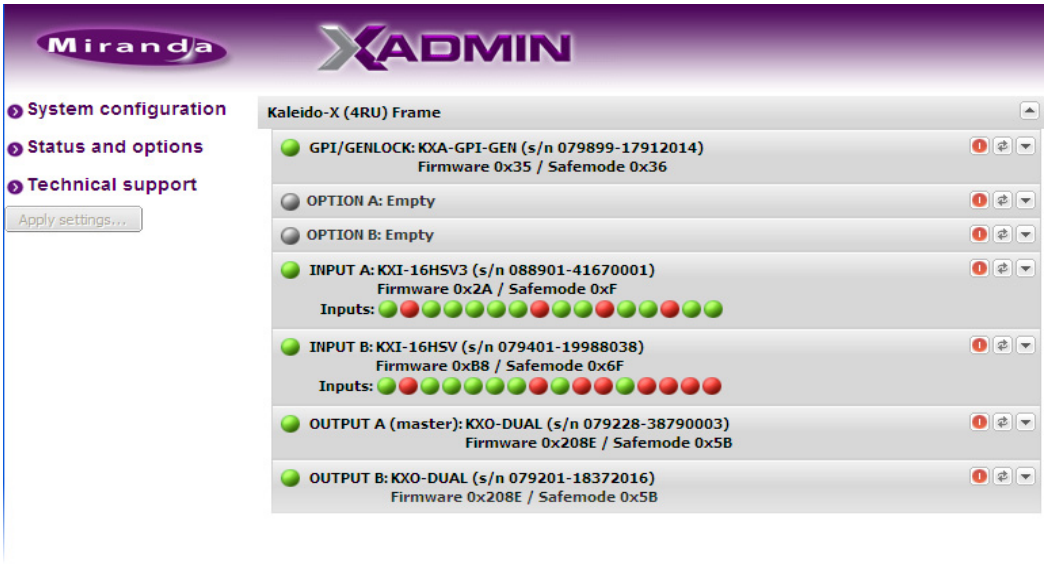


   The Kaleido-X home page appears:

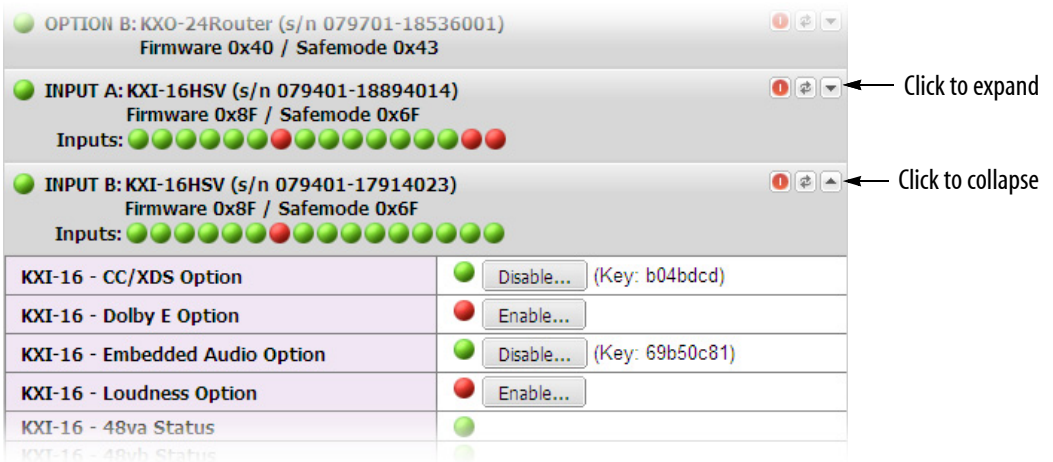
2. Click the **XAdmin** button.

   The XAdmin Status and Options page appears.

1. The multi-viewer must have Kaleido-X software version 2.10 or later.

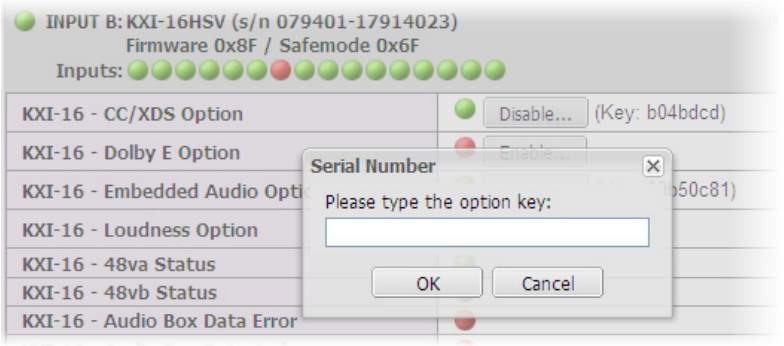


3. Click the arrow button at the end of the heading row that corresponds to the card for which you wish to enable an option.



4. Locate the entry for the option you wish to enable, and then click the corresponding **Enable** button.

   A window appears prompting you for the option key:



5. Type the key for the specific option in the box.

   Once the option is enabled, the key is displayed, and a **Disable** button replaces the **Enable** button.

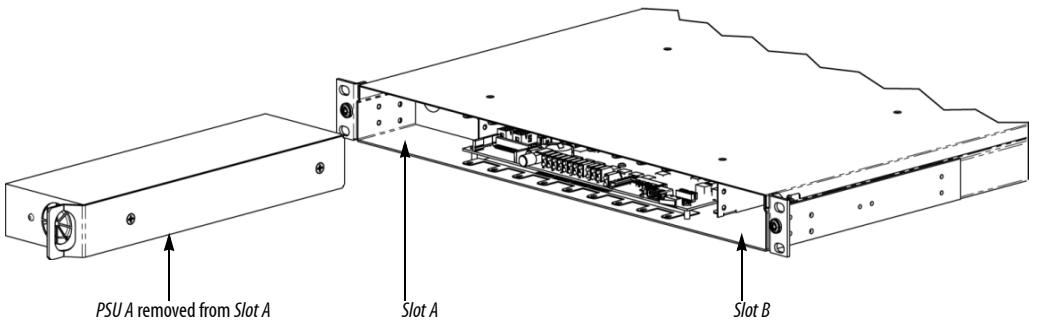
Example: To activate the Extraction of CC, Subtitling and XDS metadata option (CC/XDS Option) for a Kaleido-X input card, you would need to locate the appropriate card in XAdmin's Status and Options page, and enter the key.

Notes

- One CC/XDS Option key is needed per input card, and the extraction of CC 608, CC 708, XDS and Subtitling WST metadata are all activated as a single option.
- After enabling the 3D Support option in XAdmin, refresh the current layout or load another one, for the change to be reflected on the monitor wall.

Configuring Power Supply Redundancy on a Kaleido-X16

Power supply redundancy is an option on the Kaleido-X16, which can ship with a single PSU. In order to avoid having the system dashboard display unnecessary alarms, there is a check box in XAdmin to indicate the presence of the second PSU. By default, this option is selected (both PSUs are monitored). Removing the check mark will stop the monitoring of alarms for PSU B (its status is set to disabled, and therefore will not appear on the dashboard).



Location of Slot A and Slot B in the front of the Kaleido-X16 frame

To configure the PSU B Installed option in XAdmin:

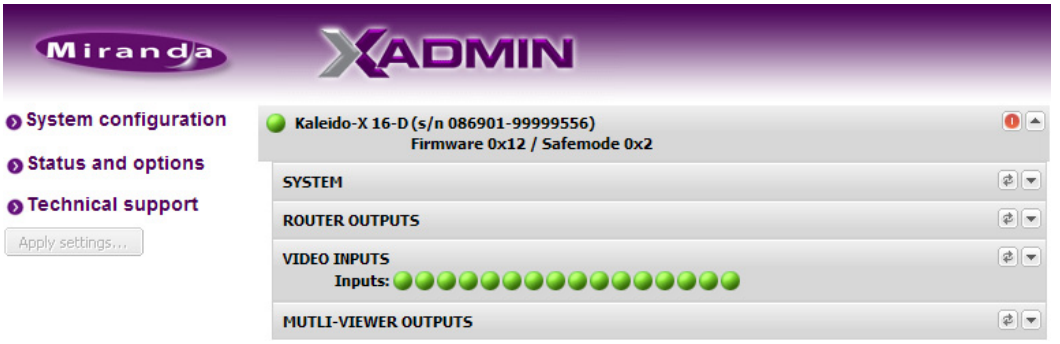
1. Open a Web browser window and type the IP address of the Kaleido-X16 frame in the address bar.

The Kaleido-X home page appears:

XADMIN
XEDIT
ROUTER CONTROL
Kaleido-X version 4.00 build 3801
XEdit version 4.00 Build 3801
Download the Java Runtime Environment installer required to use XEdit.

2. Click **XAdmin**.

   The **XAdmin** Status and Options page appears:

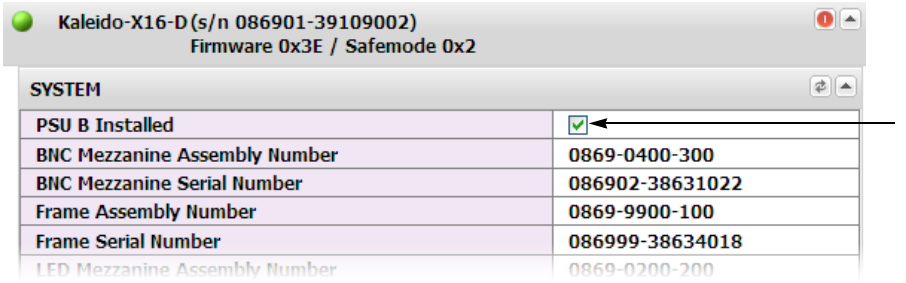


XAdmin Status and Options page

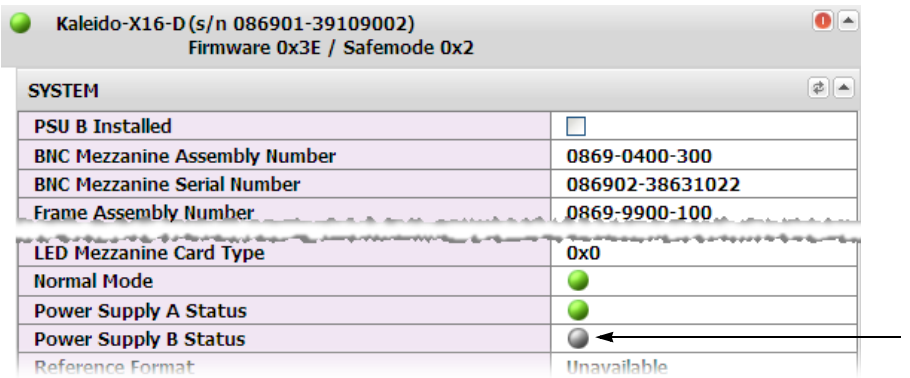
3. In the **System** header row, click the **Expand details** arrow ( ).

   A list of system details and statuses appears below the **System** header row.

4. At the top of the list, select or clear **PSU B Installed**, as required:



The change is applied immediately. The **Power Supply B Status** indicator turns gray, indicating that probing is disabled for this alarm:



IMPORTANT: The system behavior after selecting or clearing the **PSU B Installed** check box is as follows:

- When you select the **PSU B Installed** check box, the system publishes a warning that PSU B has failed if there is no PSU in *Slot B*. Do this when you have two PSUs installed in your frame.
- When you clear the **PSU B Installed** check box, the system does not generate a warning that PSU B has failed if there is no PSU in *Slot B*. Do this when you have only one PSU installed in your frame.

Installing XEdit

The Kaleido-X Layout Editor (XEdit) is used to create layouts and configure the Kaleido-X. When the computer with XEdit is connected to the Kaleido-X through a TCP/IP network, you can use XEdit to modify layouts and settings directly on the Kaleido-X, or you can work locally on the computer and then export your changes to the Kaleido-X. See “Creating Room Layouts” on page 175, for more information.

XEdit is not provided as a standalone application. You download the application to your client PC or laptop directly from the multi-viewer.

Note: You can also download XEdit from the Miranda Technical Support portal. Contact support@miranda.com for details.

To install XEdit:

1. From a workstation on the same subnet as the multi-viewer, open a Web browser window and type the IP address of the multi-viewer in the address bar.

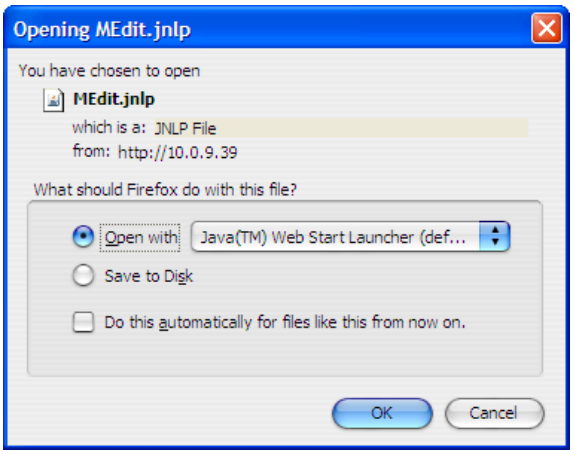
   The Kaleido-X home page appears:

Note: To use XEdit, you must have Java Runtime Environment (J2SE) version 1.6.0 update 20 installed on your PC or laptop. Click the link at the bottom of the page to download the installer for the J2SE version required to use XEdit. See "Installing the Java Runtime Environment" on page 379, for details.

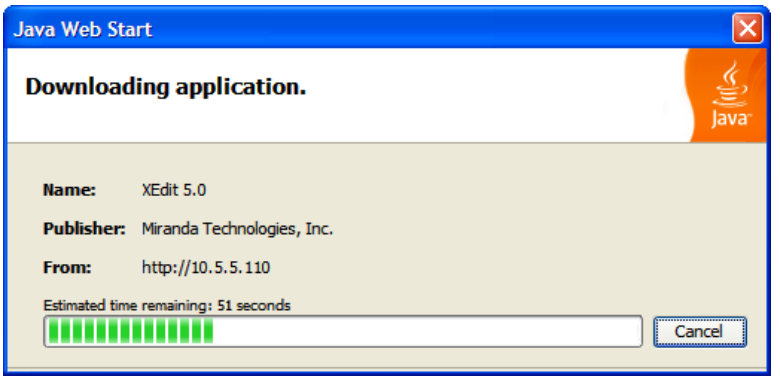
2. Click the **XEdit** button.

   The system will automatically detect the J2SE version on your computer, and, if necessary, will prompt you to install version 1.6.0 update 20 (refer to "Installing the Java Runtime Environment" on page 379, for details).

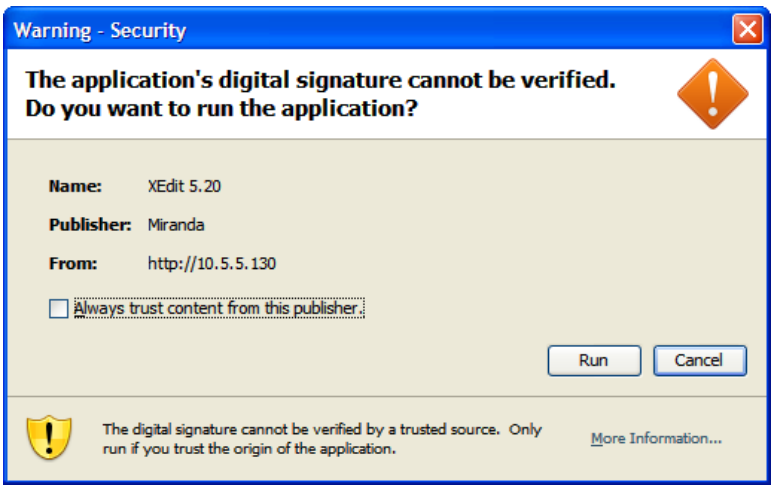
3. If the **Opening MEdit.jnlp** window appears, click **OK**.



Another window appears, displaying the progress of the XEdit download:



4. You may see a warning about XEdit's digital signature. In this case, select **Always trust content from this publisher**, and then click **Run**:


Warning - Security
The application's digital signature cannot be verified.
Do you want to run the application?
Name: XEdit 5.20
Publisher: Miranda
From: http://10.5.5.130
Always trust content from this publisher.
Run
Cancel
The digital signature cannot be verified by a trusted source. Only run if you trust the origin of the application.
More Information...

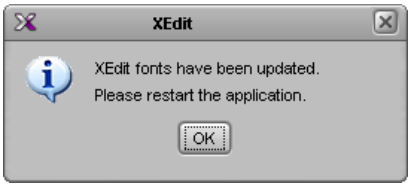
The **XEdit** startup screen appears:

5. Depending on your Java settings, the Java Web Start installer may prompt you to confirm whether you wish to have XEdit shortcuts created. Click **Yes**.

   This will add a shortcut icon

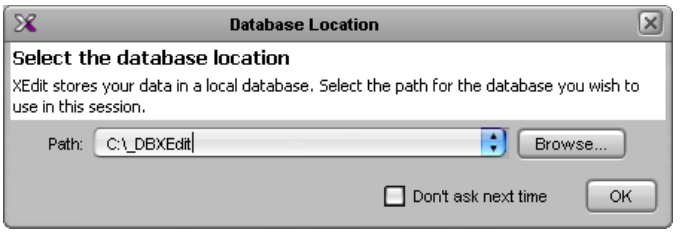
on your desktop.

   Note: If the installer cannot find all of the fonts needed by XEdit, it will download them to your PC automatically. A message will appear to confirm the font update, and advise you to restart the application:

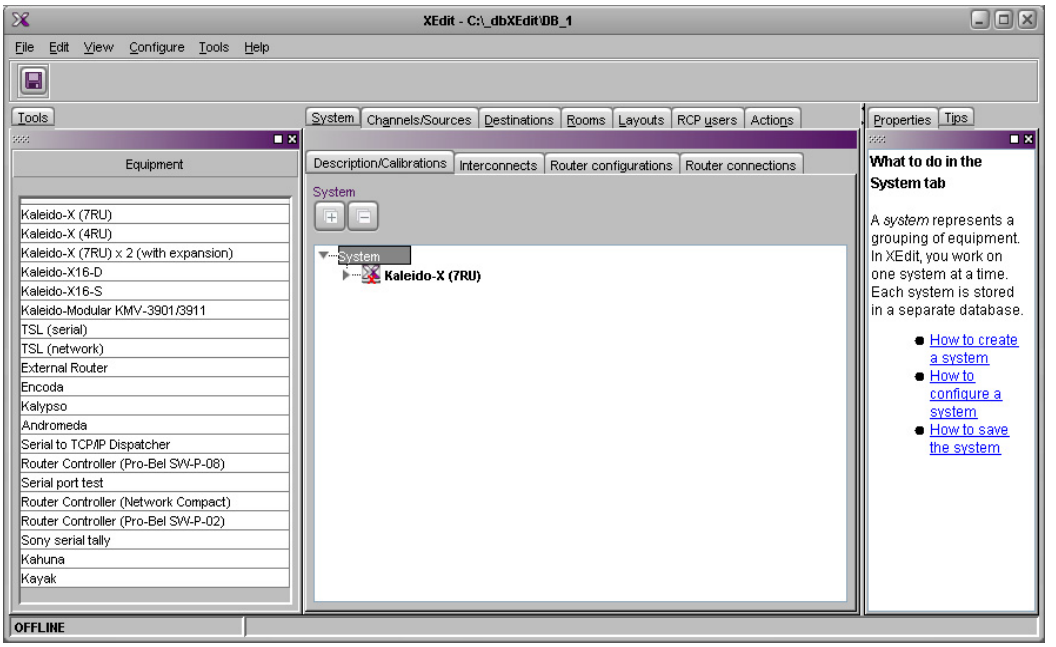


   - Click **OK** to continue, then restart XEdit from the desktop shortcut.

6. When prompted to specify a database, choose one from the **Path** list, or click **Browse** to specify another location, and then click **OK** to continue:


Database Location
Select the database location
XEdit stores your data in a local database. Select the path for the database you wish to use in this session.
Path:
C:_DBXEdit
Browse...
Don't ask next time
OK

7. Once the installation process has completed, XEdit's main application window appears:



Notes

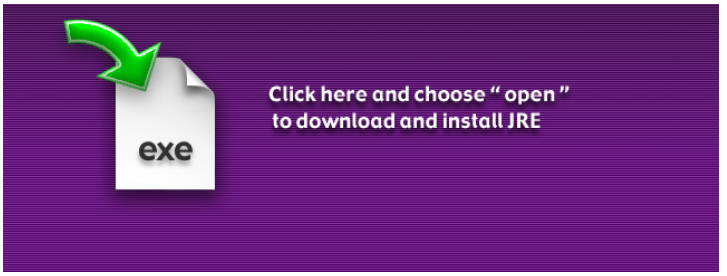
- Once it has been downloaded from the multi-viewer, the XEdit application remains on your PC, and can be launched from the shortcut icon that was created on your desktop in step 5 above.
- You may need to upgrade your Audio Bridge Terminal and Kaleido-RCP2 devices (if available) to the latest firmware. The update files can be found on the DVD that shipped with your multi-viewer. Please refer to the *Kaleido-RCP2 Guide to Installation and Operation*, and to the *Audio Bridge Terminal Guide to Installation and Operation* (available on the DVD) for instructions on how to determine the firmware level, and how to perform the upgrade for these devices.

Installing the Java Runtime Environment

XEdit is a Java Web Start application, and thus requires the Java Runtime Environment to be installed on your system. When you try to access XEdit from the Kaleido-X home page, the system will automatically detect the Java Runtime Environment (J2SE) version on your computer, and, if necessary, will prompt you to install version 1.6.0 update 20. Alternatively, you can download the J2SE installer from your multi-viewer by clicking the link at the bottom of the Kaleido-X home page.

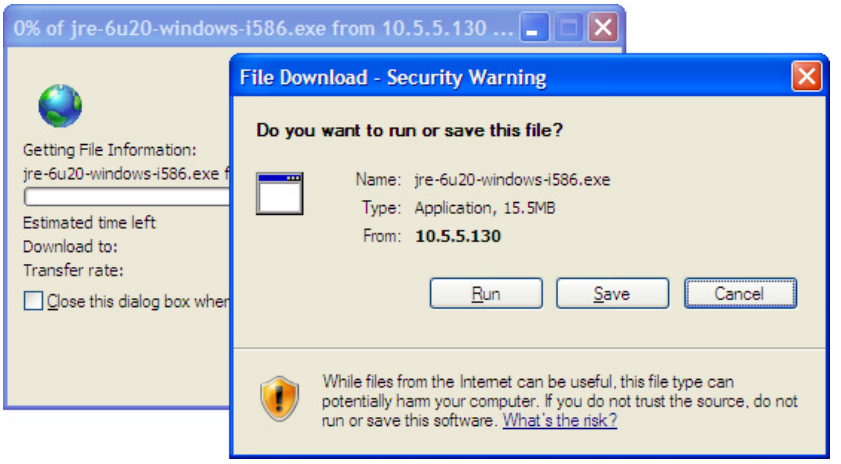
To install J2SE:

1. Click anywhere in the prompt area, on the page that appeared when Java Web Start detected that your system was missing the required J2SE version:



Alternatively, click the link at the bottom of the Kaleido-X home page:

2. If a security warning appears, click **Run**, to start downloading the J2SE installer file:

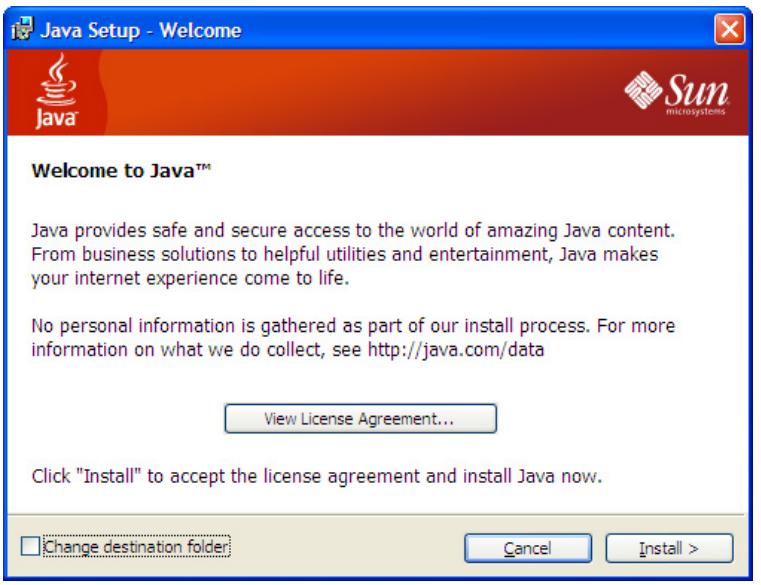

0% of jre-6u20-windows-i586.exe from 10.5.5.130 ...
Getting File Information:
jre-6u20-windows-i586.exe f
Estimated time left
Download to:
Transfer rate:
Close this dialog box wher
File Download - Security Warning
Do you want to run or save this file?
Name: jre-6u20-windows-i586.exe
Type: Application, 15.5MB
From: 10.5.5.130
Run
Save
Cancel
While files from the Internet can be useful, this file type can potentially harm your computer. If you do not trust the source, do not run or save this software. What's the risk?

Another security warning may appear:

Internet Explorer - Security Warning
Do you want to run this software?
Name: Java(TM) SE Runtime Environment 6.0 Update 20
Publisher: Sun Microsystems, Inc.
More options
Run
Don't Run
While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. What's the risk?

3. Click **Run**, to open the installer file.

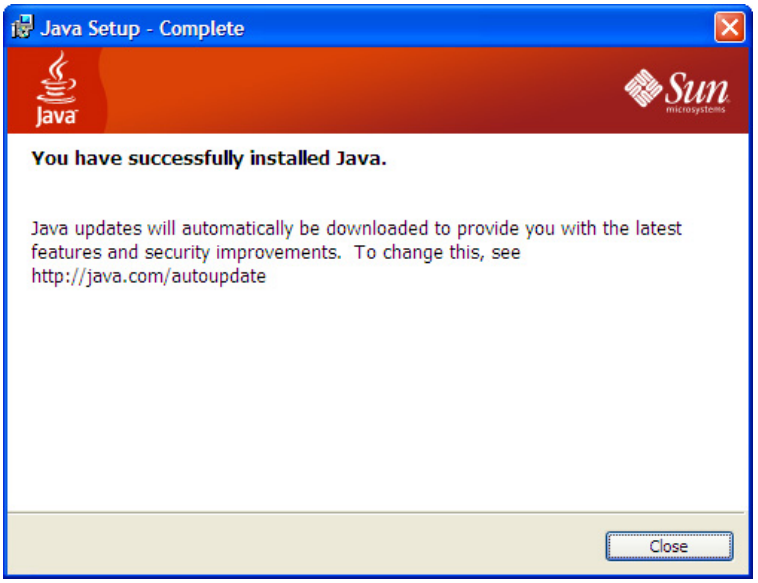
   You will be prompted to accept the license agreement.


Java Setup - Welcome
Java
Sun
microsystems
Welcome to Java™
Java provides safe and secure access to the world of amazing Java content. From business solutions to helpful utilities and entertainment, Java makes your internet experience come to life.
No personal information is gathered as part of our install process. For more information on what we do collect, see http://java.com/data
View License Agreement...
Click "Install" to accept the license agreement and install Java now.
Change destination folder
Cancel
Install >

4. Review the license agreement if you wish, and then click **Install** to proceed.

   Java Setup will update your PC or laptop.

5. Click **Close** once the installation has completed.


Java Setup - Complete
Java
Sun
microsystems
You have successfully installed Java.
Java updates will automatically be downloaded to provide you with the latest features and security improvements. To change this, see http://java.com/autoupdate
Close

Obtaining EDID Data From Display Screens When Using the DXF-100 Interface

The DXF-100 is a transmitter/receiver combination that allows a digital flat panel display to be located up to 1,000 meters (3,300 feet) away from the signal source. The transmitter and receiver are interconnected by a single multimode optical fiber, and connect to the source and display using DVI connectors.

The DXF-100 must be configured for its target display, *before* it is connected to the multi-viewer, otherwise the Extended display identification data (EDID) information listed in XAdmin's Status and Options page for the corresponding output card will not reflect the actual values for the target display. XAdmin would not be reporting the actual timing data from the display, but default values corresponding to the maximum resolution supported by the DXF-100, i.e. 1920 × 1200. The DXF-100 interface is unidirectional from the transmitter (multi-viewer) to the receiver (display). For XAdmin to show timing data from the display, the EDID information needs to be transmitted in the reverse direction: from the display to the multi-viewer.

To obtain a display's timing information in XAdmin:

- Connect the display directly to the DVI output of the multi-viewer, by using a copper cable. (This is not always practical, since the display can be far or mounted on a wall.)
- Alternatively, connect the DXF-100 transmitter to the DVI input connector on the display, and then connect it to its power supply. The LED will flash for a few seconds while the transmitter reads and stores the EDID information from the display. When the LED stops flashing, disconnect the transmitter from the display and reconnect it to the multi-viewer. The EDID information from the display will now be visible in XAdmin. The EDID information from the display will now be visible to the multi-viewer. If the multi-viewer is configured to adapt itself to the native resolution of the display, the resolution for the output will change automatically.

Notes

- Miranda offers a more versatile bidirectional interface, the DXF-200 DVI/HDMI Optical Extension System, which has superseded the DXF-100 interface. For more information on the DXF-200, contact your Miranda sales representative.
- As of Kaleido-X version 4.10, the Monitor EDID Auto-detect feature is enabled by default in order to facilitate the initial setup of a Kaleido-X system. To avoid problems, Miranda recommends that you disable the auto-detect feature once the initial setup is completed. If you later wish to replace one of the displays, re-enable the Auto-detect feature beforehand (remember to disable it once the new display is up and running).
- Prior to Kaleido-X v. 3.00, EDID information was only reported for the master KXO-Dual card. In more recent versions, every KXO-Dual/KXO-Dual3 card reports the EDID information for its associated displays.

See also: • For more information on the DXF-100 interface, refer to the *DXF-100 DVI Fiber Optic Interface User's Manual* (part no. M792-9500-101).

Servicing

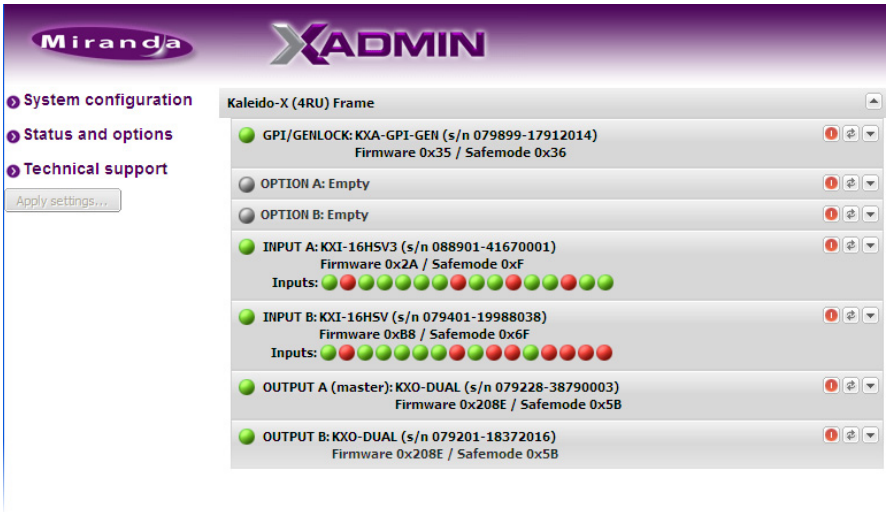
Generating a System Snapshot

To generate a system snapshot:

1. From a workstation on the same subnet, open a Web browser window and type the IP address of the multi-viewer in the address bar.[1]
2. In the Kaleido-X home page, click the **XAdmin** button.

   The XAdmin Status and Options page appears.

1. The multi-viewer must have Kaleido-X software version 2.10 or later.

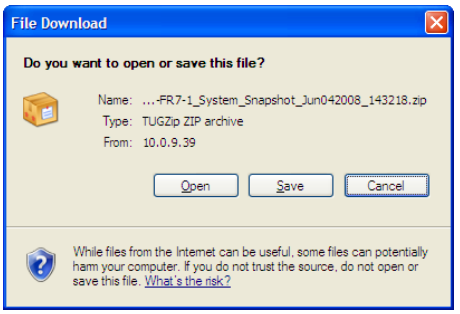


3. Click the **Technical support** link in the navigation pane.

   The Technical Support contact information page appears.

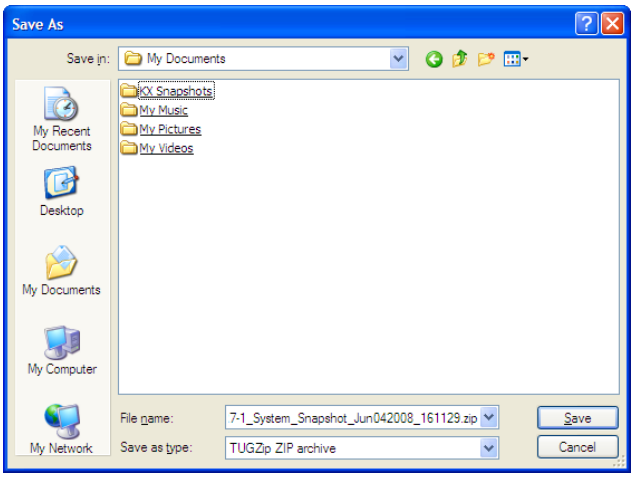
4. Click **System snapshot**.

   The system snapshot generation takes a few seconds, and then the **File Download** window appears.

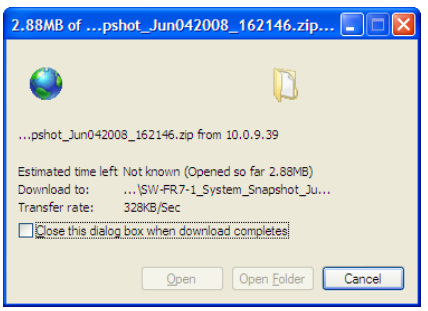

File Download
Do you want to open or save this file?
Name: ...-FR7-1_System_Snapshot_Jun042008_143218.zip
Type: TUGZip ZIP archive
From: 10.0.9.39
Open
Save
Cancel
While files from the Internet can be useful, some files can potentially harm your computer. If you do not trust the source, do not open or save this file. What's the risk?

5. Click **Save**.

   The **Save As** window appears.

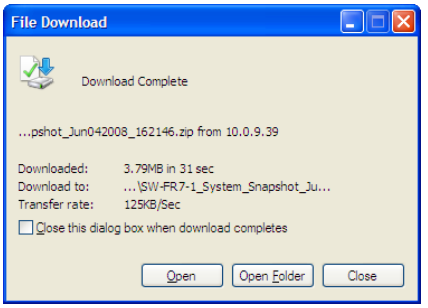


6. Type a new name for the file in the **File name** box if desired.
7. Browse to the location where you wish to save the file.
8. Click **Save**.



> **Note:** Depending on the file size, the download may take a few seconds.

Once the download has completed, the message "Download Complete" may appear:



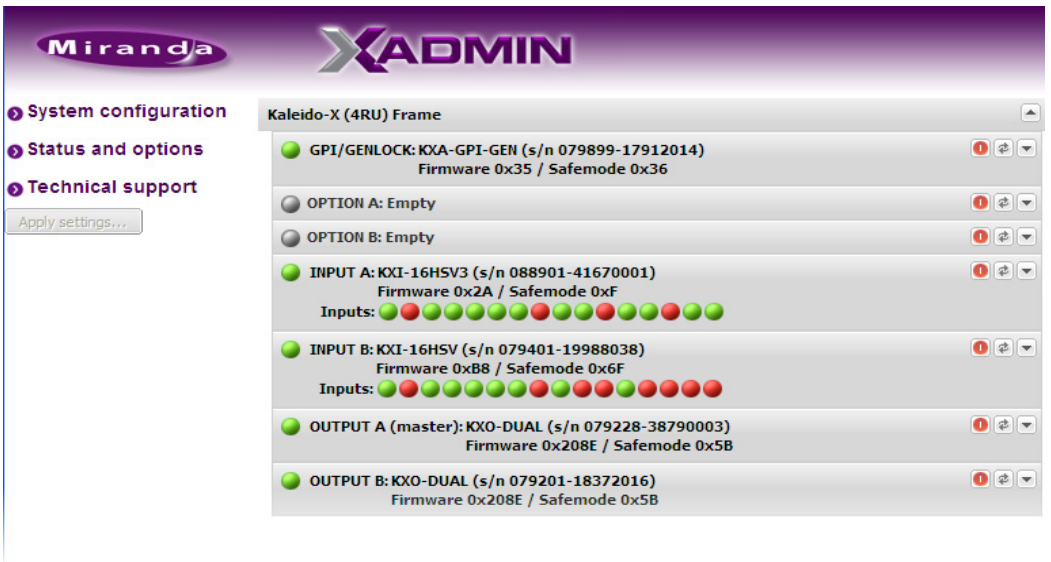
9. Click **Open Folder**, if you wish to access the downloaded file, or click **Close** to dismiss the message.

Viewing a Multi-Viewer's Status Information

To view the status information for a multi-viewer:

1. From a workstation on the same subnet, open a Web browser window and type the IP address of the multi-viewer, in the address bar.[1]
2. In the Kaleido-X home page, click the **XAdmin** button.

   The XAdmin Status and Options page appears, displaying a list of all cards and their statuses:

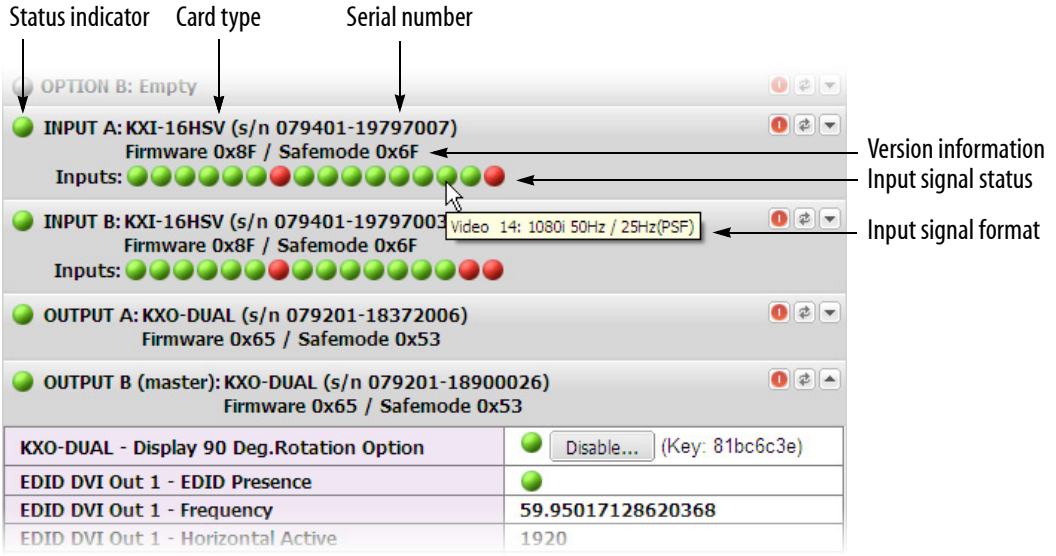


   - In the case of a Kaleido-X (7RU) or Kaleido-X (7RU) × 2, cards are presented in the order they appear, from left to right when looking at the front of the chassis.
   - In the case of a Kaleido-X (4RU), cards are presented in the order they appear, starting from the top left corner down, and again from the top right corner, when looking at the front of the chassis.
   - Some heading rows may show a card type, serial number, firmware and safe mode versions, a module status indicator, and input signal status indicators.

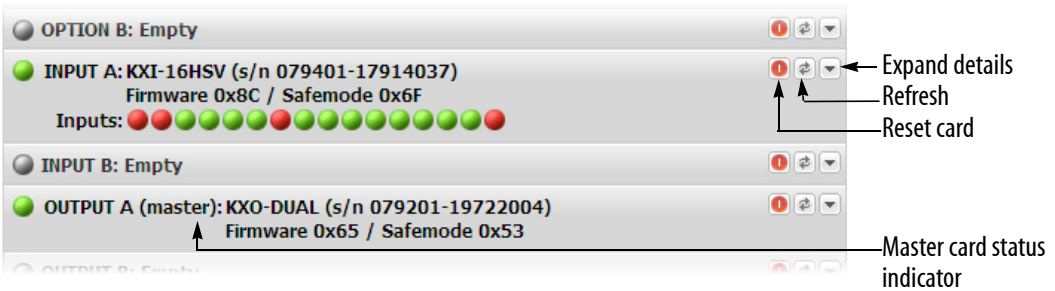
1. The multi-viewer must have Kaleido-X software version 2.10 or later.

- The module status indicator shows whether the card (or module) is running normally (green) or in safe mode (red).
- The signal status indicators reveals the presence of a valid input signal at the corresponding connector.

3. Move the pointer to an input signal status indicator to view the associated signal format:



4. Click the arrow button at the end of each heading row to view detailed information about the associated module:



In the case of a Kaleido-X multi-viewer model, you can identify which output card currently assumes the *software master* role (and is thus assigned the multi-viewer's IP address) by looking for the word "master" next to the card's identifier, for example: "OUTPUT A (master)".

Viewing Kaleido-X Version Information

To view your multi-viewer's system and software version information:

1. From a workstation on the same subnet, open a Web browser window and type the multi-viewer's IP address in the address bar.[1]

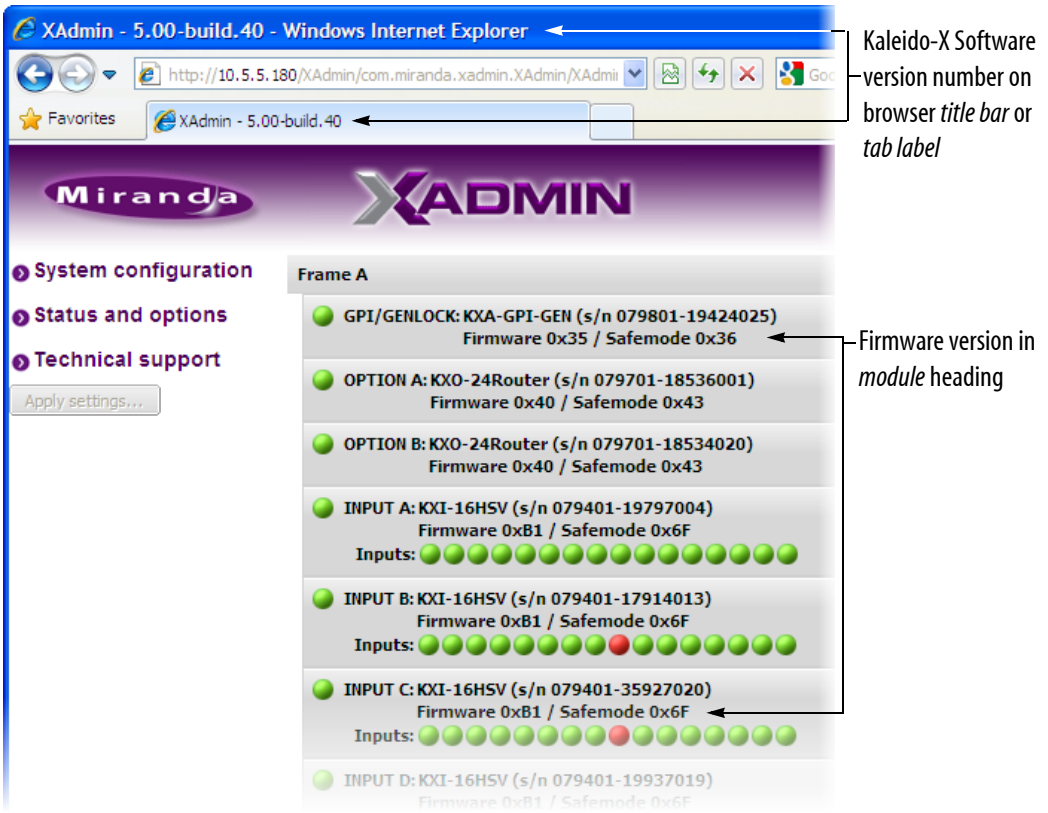
The Kaleido-X home page appears, showing the system's and XEdit's software version information at the bottom.

2. In the Kaleido-X home page, click the **XAdmin** button.

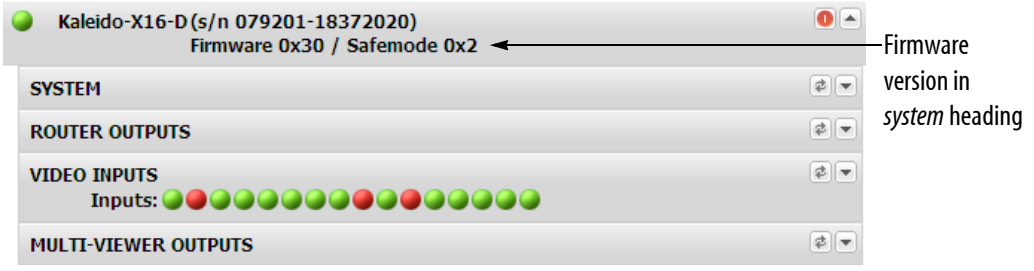
   The XAdmin Status and Options page appears. As shown in the examples below:

   – The Kaleido-X Software version appears on the Web browser's title bar or tab label.
   – The firmware and safe mode package numbers appear both in the relevant heading row, and within the detailed status information.

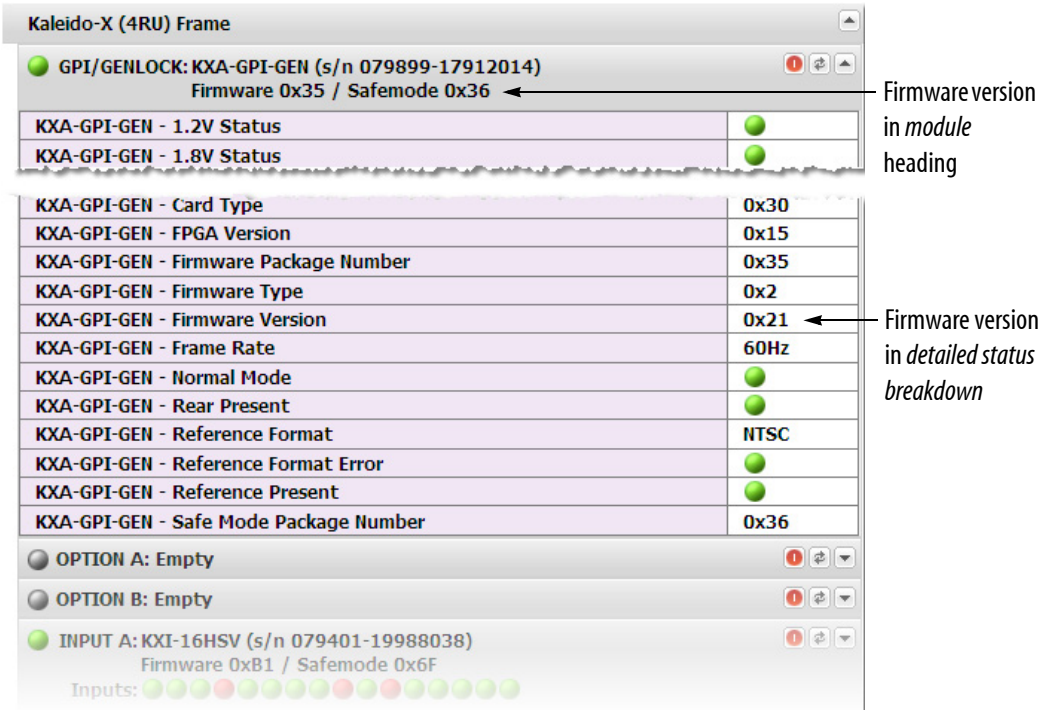
1. The multi-viewer must have Kaleido-X software version 2.10 or later.



Example 1: Status and Option page for a Kaleido-X (7RU) × 2 expansion system



Example 2: Status and Option page for a Kaleido-X16 system


Kaleido-X (4RU) Frame
GPI/GENLOCK: KXA-GPI-GEN (s/n 079899-17912014)
Firmware 0x35 / Safemode 0x36
KXA-GPI-GEN - 1.2V Status
KXA-GPI-GEN - 1.8V Status
KXA-GPI-GEN - Card Type 0x30
KXA-GPI-GEN - FPGA Version 0x15
KXA-GPI-GEN - Firmware Package Number 0x35
KXA-GPI-GEN - Firmware Type 0x2
KXA-GPI-GEN - Firmware Version 0x21
KXA-GPI-GEN - Frame Rate 60Hz
KXA-GPI-GEN - Normal Mode
KXA-GPI-GEN - Rear Present
KXA-GPI-GEN - Reference Format NTSC
KXA-GPI-GEN - Reference Format Error
KXA-GPI-GEN - Reference Present
KXA-GPI-GEN - Safe Mode Package Number 0x36
OPTION A: Empty
OPTION B: Empty
INPUT A: KXI-16HSV (s/n 079401-19988038)
Firmware 0xB1 / Safemode 0x6F
Inputs:
Firmware version in *module* heading
Firmware version in *detailed status breakdown*

Example 3: Status and Option page for a Kaleido-X (4RU) system

Upgrading your Multi-Viewer System

For information on upgrading your multi-viewer system to version 5.30 of the Kaleido-X Software, please refer to the Kaleido-X Version 5.30 Release Notes.

Index

Numerics

0 VU 106, 107

A

ABT 345
AC-3 metadata 123
Actions
- assigned to monitors 239
- background actions 241
- trigger 56
- trigger audio monitoring 58, 59

AFD 194
Alarm monitors 216
Alarms
- debouncing 119, 128
- global 121
- levels 141
- providers 128
- SNMP 131
- status 120, 216
- status indicator 121
- sub-alarms 121
- threshold 125
- virtual 121

Andromeda 311
Aspect ratio
- calibration 110
- changing 41
- of a room display 162

Aspect ratios
- AFD 194
- automatic 194
- WSS 194

Assigning
- alarms to logical sources 141
- audio outputs to RCP users 259
- full screen layouts to RCP users 258
- logical sources to monitors 48
- room layouts to RCP users 257
- timers to RCP users 260
- timers to rooms 255

Audio
- metadata 109
- monitoring delay 102
- reference level 106, 107

Audio Bridge Terminal 345, 368
Audio level meters
- scale 203

Audio monitoring
- triggered by actions 58, 59
- triggered from the RCP2 58

Audio monitors
- scale 203

Audio outputs
- assigning to RCP users 259

Audio scales 201, 203
- backup 75

Auto-layout 180

Automatic aspect ratios 194

B

Background actions 241
Background images
clock logo 223
custom safe area 189
DVI input 184
on layouts 182
Backup
audio scales 75
creating 74
resolutions 75
retrieving 75

C

Calibrating
0 VU 106, 107
audio metadata 109
audio monitoring delay 102
automatic aspect ratio 110
brightness 96
closed captioning 112
color saturation 99
contrast 96
detail enhancement 111
DVI keying mode 101
dynamic range 111
GPI lines 117
metadata holding time 113
router field selection switching 115
router output signal reclocking 116
subtitling 112
Calibration 66
Card 65
virtual 65
Cascade 14, 65
CC 122
Channels 65, 135, 136, 141
assigning to monitors 48, 182
levels 139
Client PC 363
Clocks 220
Closed captioning 45, 112, 113, 198
Closed captions 122
Cluster 13, 65, 79
rooms 151
Color saturation 99
Composites
creating 225
resizing 229
Configuring
alarm thresholds 125
aspect ratio 194
Audio Bridge Terminal 368
audio scales 201, 203
client PC 363
IP address 358
IP settings 358
Kaleido-X 85, 358, 361
networking 363
RCP2 365
router output signal reclocking 116
routers 265
serial devices 311
static UMD text 214
system 85, 361
UMD text 214
Control panel
Kaleido-RCP2 345
Countdown timers 207, 211
Cropping 42, 192
Crosspoints 50, 51

D

Dashboard 36
disabling 166
Database 64
backup 74
location 77

recommended workflow 90
retrieving backup 75
Debouncing 119, 128
Default layouts 22
Detail enhancement 111
Diagonal size 163
Dialnorm 107, 123
Digital content advisory descriptor 218
Display libraries 166
closing 169
opening 169
Displays
adding to room 148
aspect ratio 162
diagonal size 163
full screen zone 151
height 164
position 165
properties 152
resolution 31, 154, 157, 160
rotation 165
width 164
Dolby E metadata 123
Dolby VANC
dialnorm 107
loudness 107
DTVCC 113
Dual system 12
DVI 184
DVI keying 101
DVTCC 122
Dynamic range 111

E

EDID 31
Expansion system 12, 64, 306
Extended Data Services 218

F

Factory defaults 87
Floating actions 241
Frame
options 371
status information 346, 386
version information 346, 387
Full screen layouts
assigning to RCP user 258
creating 176
Full screen zones 41, 151

G

Global alarms 121
GPI 56, 117

H

HD closed captions 122
Height 164

I

Input method 47
Interlaced 161
IP address 358
IP settings 358

K

Kahuna 323
Kaleido-Modular 6, 64
Kaleido-RCP2 345
Kaleido-X 63
4 RU frame 10
7RU frame 11
cluster system 65
configuration 85, 358, 361
expansion system 12, 64
frame status 386
version information 387
Kaleido-X16 ....8, 64
Kalypso 311, 313
Kayak 330
Keyboard input method 47

Keying mode
calibration 101
KMV-3901/3911 .... 6, 64
cascade system 65

L

Languages, input method 47
Layout
background keying 101
foreground keying 101
Layouts 173, 178
assigning to RCP users 257
automatically populated grid 180
background image 182
clocks 220
closing 175
countdown timers 211
digital content advisory descriptor 218
duplicating 181
DVI background input 184
full screen 176
loading 22, 38
pan view 186
presets 40
refreshing 40
room layout 175
source assignment 182
timers 211
V-chip monitor 219
XDS metadata 218
Levels
in logical source 139
in router 267, 298, 299
Libraries
displays 166
widgets 234
Loading layouts 38
Logical source
levels 139
Logical sources 65, 135, 136, 141
assigning to monitors 48, 182
Login, monitor wall 35
Loudness 107

M

Markers, safe area 43
Matrix ID 267, 298
Metadata
AC-3 123
closed captions 122
display 218
Dolby E 123
holding time 113
subtitles 122
teletext 122
Monitor wall
dashboard 36
disabling dashboard 166
loading layouts 22
login 35
timers 53
Monitoring output
HD-SDI 161
Monitors
alarm 121, 216
clock 220, 223
composite 225, 229
libraries 234
replication 180
resizing 229
source assignment 48, 182
timer 211
V-chip 219
video 187
XDS metadata 218
Multi-viewer
KMV-3901/3911 6
options 371
status information 346, 386
version information 346

N
Network impact 353
Networking 363
Nominal level 106, 107

O
OP-47 122
Options 347, 371
Overscan 192

P
PC configuration 363
Peripheral devices 66, 311
Port usage 353
client PC to multi-viewer 354
e-mail alerts 356
iControl to multi-viewer 355
multi-viewer to client PC or laptop 354
multi-viewer to multi-viewer 355
multi-viewer to/from NTP server 357
multi-viewer to/from RCP2 356
multi-viewer to/from SNMP devices 357
router controller to multi-viewer 356
Preferences, RCP user 256
Presets 40
Production switchers
Kahuna 323
Kalypso 313
Ross Video 313
Snell & Wilcox 323
Sony 318
Program config 123
Progressive 161

R
RCP2
adding users 250
audio monitoring 58
configuration 365
layout presets 40
login 35, 367
removing users 251, 252
user preferences 256
RCP2 Login 368
Reclocking 116
Reference levels 106, 107
Refreshing layouts 40
Region editor 231, 232
Remote control panel
Kaleido-RCP2 345
Resolutions 154, 157, 160
automatic detection 31
backup 75
Restoring
database backup 75
factory defaults 87
Rooms
assigning layouts to RCP users 257
closing 148
cluster 151
creating 146
dashboard 166
display aspect ratio 162
display diagonal size 163
display height 164
display position 165
display properties 152
display resolution 154, 157, 160
display rotation 165
display width 164
displays 148
full screen layouts 176
full screen zone 151
layouts 175
opening 147
pan view 186
zoom view 186
Ross Video production switchers 313
Rotation 165
Router cards

expansion 306
SDI signal reclocking 116
Router controllers 265
Routers 265
crosspoints 50, 51
field selection switching 115
levels 267, 298, 299
matrix ID 267, 298

S

Safe area 43
free-form 189
markers 189
Scan mode 161
SDI output format 161
Serial devices 311
Serial port test third-party device 339
Serial to TCP/IP Dispatcher 311
Servicing 383
Slot, virtual 65
Snapshot 345
Snell & Wilcox production switcher. See Kahuna
SNMP
traps 131
Sony production switchers 318
Sources 65, 135, 136, 141
assigning to monitors 182
levels 139
Sources table
resizing columns 141
sorting 140
Status
alarm 120
information 346
system 15
Subtitles 112, 113, 122, 198
Switchers
Kalypso 313
Ross Video 313
Sony 318
System 63
backup 74
cascade 65
cluster 13, 65, 79
configuration 85
creation 77
dual 12
expansion 12, 64
KMV-3901/3911 6
options 371
retrieving backup 75
snapshot 383
status information 386
verification 15
version information 387

T

Tally contribution devices 311
Tally interface devices 311
Teletext 122
Text mode 198
Third-party devices 265
serial port test 339
TSL (serial) 311
Timers 53, 207, 211
assigning to RCP users 260
assigning to rooms 255
Traps
SNMP 131
Troubleshooting 383
system snapshot 345
TSL
serial devices 311

U

UMD
editing text 47
static text 214
text font 214
Underscan 192

Upgrading 390

V

V-chip monitor 219
Version information 387
Versions 346
Video monitors 187
  aspect ratio 187
  cropping 192
  duplicating 180
  full screen 41
  overscan 42, 192
  resizing 187
  safe area 43, 189
  underscan 42, 192
  zooming 192
Virtual card slot 65

W

Widgets
  alarm status 121, 216
  clock 220, 223
  composite 225
  libraries 234
  replication 180
  source assignment 48, 182
  timers 53
  V-chip monitor 219
  video 187
  XDS metadata 218
Width, display 164
Workflow, database management 90
WSS 194
WST 122

X

XAdmin 345
  options 347
  virtual card slots 66
XDS 113, 218
XEdit 64, 345
  installation 375
  opening 66
  shortcuts 8
  virtual card slots 65

Z

Zero VU 106, 107
Zoom, Pan, Layouts
  zoom view 186
Zooming 42

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